



MOTHER AND CHILD.

Their welfare the hope of the country.

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BULLETIN No. 35  
BUREAU OF EDUCATION

# HOUSEKEEPING AND HOUSEHOLD ARTS

A MANUAL

FOR WORK WITH THE GIRLS IN THE  
ELEMENTARY SCHOOLS OF THE  
PHILIPPINE ISLANDS

BY

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MANILA  
BUREAU OF PRINTING  
1911

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## FOREWORD.

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The need of some definite guide for the teaching of so-called domestic science has been felt ever since the subject began to be taught generally throughout the Islands. In the absence of some such definite plan, there has been a lack of concerted action, each teacher to a large extent following her own individual bent. While the results thus far accomplished have been very gratifying, still it is felt that sometimes the work has gone wide of the mark, failing to meet the peculiar needs of homes whose antecedents were in some cases quite misunderstood, or not understood at all, by the teacher.

The author of this manual strikes the keynote of the whole aim of domestic science work by keeping constantly before the reader the ideas that the teacher must know the homes from which her pupils come; that any increase in the necessities of the Philippine home must come gradually; and that the immediate duty of the teacher is to teach how to get the best results out of such things as are already easily obtained. It was with this idea in mind that the recipes for cooking were worked out. In nearly every instance the materials and ingredients are such as are already known to, and easily obtained by, the people of these Islands.

Pure air; sunshine; industry; cleanliness of body, clothing, house, and premises; sterilized drinking water; active sympathy for the sick and distressed; proper manners and refined conduct in every relation in life—these are some of the things that need quite as much attention as sewing and cooking.

This manual is mainly intended to be a guide for the teacher. However, it may be used by the pupil as a text-

book in school and cookbook in the home. Four appendixes have been added—the first giving a list of the equipment recommended for beginning the domestic science work in an intermediate school; the second being a glossary of native and other names and phrases used in the text; the third being a series of recipes for cooking rice, these recipes being taken from pamphlets published in the United States; and the last being an index to the cooking recipes and other specific directions and discussions.

The author of this manual is Mrs. Alice M. Fuller, teacher of home economics, Tuguegarao, Cagayan. The text has been edited and brought to its present form by Mr. J. D. DeHuff, division superintendent of schools, assisted by Mr. W. T. Hilles, instructor in the University of the Philippines. The glossary was compiled by Mr. DeHuff and revised and verified by Mr. Hugo H. Miller, of the School of Commerce, and Mr. Elmer D. Merrill, of the Bureau of Science.

Manila, February 10, 1911.

FRANK R. WHITE,  
*Director of Education.*

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# HOUSEKEEPING AND HOUSEHOLD ARTS.

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## INTRODUCTION.

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Purpose of this bulletin.—Suggestions to teachers concerning the problems they will have to work out and the necessity of acquainting themselves with conditions as they actually exist.—Influence of women in the Philippines; methods of instruction; buildings; equipment.—Coöperation between home and school.

### THE AIM OF THIS MANUAL.

This manual has been prepared with a view to helping the girls of our schools to become intelligent home makers and capable mothers and to meet the common needs of everyday life. The momentous problem before the teacher of so-called domestic science is not simply a matter of teaching how to cook and sew, but rather how to live.

There is suggested in this outline perhaps more work than can be done thoroughly by any one teacher in the time allowed. Each teacher has a distinct problem before her and must select for her girls the work which they especially need—that which will be most profitable and satisfactory to her own class. In order for the instruction to be satisfactory, the interest of the girls must be constantly maintained; and to be profitable, the selection must be such as will be the most helpful to the particular group of girls concerned. One teacher may work with girls from the better-to-do families—girls whose mothers and grandmothers have intelligence and refinement and who are accustomed to plenty, eager and willing to try new ideas in their homes, and glad to provide all the materials necessary

in the class room; while another teacher may work with girls from homes so poor that the barest necessities of life are often lacking.

A successful teacher of domestic science, in order to conduct the work so that it may be profitably applied, must make herself thoroughly conversant with the home life of her pupils. Tact must, of course, be used in home visiting; for if the girls feel that the teacher is meddling, she can do no good. The object should be to see life from the girls' point of view, as well as to have them see things as they appear to the teacher. If the home as it exists is not constantly in the mind of the teacher, the work will soar so far above actual conditions as to make the most earnest effort little better than a waste of time.

The girls must not feel that "domestic science," or "home economics," or whatever this branch of study may be called, is a name for the process of forcing them to adopt American customs. It has to do with all that goes to make up everyday right living and is taught not only in the Philippine Islands but in all the civilized countries of the world. The basis of a nation's welfare is in its home life, and no nation can be powerful which has not the right kind of homes. Homes consist of individuals, who taken together compose the nation; and unless these individuals are healthy and happy, they do not make desirable citizens. Health and happiness depend upon everyday conditions in the home. Girls are to be the home makers and must therefore be taught all those things which will enable them to meet their responsibilities.

The importance of this line of work is manifest; and it offers the teacher unique opportunities for study and initiative. The work of a successful teacher of this subject can not be confined to five short hours in the schoolroom. She should take the class sometimes to the market and the native shops and call their attention to any unsanitary conditions which may exist, as well as other common sights which appeal to the observing person as contrary to the laws of life. Food exposed to dust and flies; people handling the food and spitting about the market place; half-starved dogs poking their noses into food receptacles; young-



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PLATE I.—OPPORTUNITIES FOR IMPROVEMENT.

sters going about in the cool season with one little garment, a cough, and a troublesome nose; thin peevish babies chewing upon impossible things—some or all of these sights are so common as to attract but little attention on the part of persons accustomed to them; but when seen through an observing teacher's eyes, they give the girls a new point of view and make the work more truly interesting and vital.

Both market visiting and home visiting are often disheartening and many of the customs one finds in this country are to be condemned. Nevertheless, there is also much to commend. In their home life the people are affectionate and generous; they are hospitable and charitable; and they take good care of cripples, orphans, and widows. The grace of the girls on formal occasions is charming; they do not appear awkward and ill at ease, but conduct themselves with real dignity. In few countries in the world, and surely in no other eastern country, does woman have the power and influence that she has in the Philippines. She usually controls the household administration, and generally it is a woman who holds the purse strings. These facts render the influence of the teacher of domestic science one of the greatest forces which can be brought to bear upon the innermost life of the nation.

Filipinos respect each other's personality, and their reverence for established customs may be utilized as a rock upon which to build the structure of better womanhood. When the girls have been taught to be self-reliant and to make their lives conform to the customs obtaining among the most highly refined individuals of their sex, the family is bound to respect these new customs, and the little leaven is at work which may in time bring about an improvement in the habits of the entire people.

#### METHOD OF INSTRUCTION.

The most satisfactory method of instruction in housekeeping and household arts is actual housekeeping in such a house as the average pupil comes from. The girls should be shown how to get the best out of what they have, and better ways of doing what they have to do. The chief object is to improve the home life, and we expect too

much of inexperienced girlhood when we build a model home and ask the pupils to raise their homes to that standard. They are unable from any standpoint to do this; and although they may make a good showing in the class room, the work which does not touch the real home life is a miserable failure.

The ideal way of teaching the girls would be to work in the individual homes; but as this does not seem practicable in connection with our schools, the teacher of domestic science will find that she comes into much closer contact with vital matters if she meets her pupils in such a house as those in which they actually live.

The house in which this work is to be given should be a home with nothing about it to suggest the class room; but there should be a large kitchen with conveniences for twelve girls to cook at one time, and the sala should be large enough to be used as a sewing room and assembly hall by all the girls of the school and for certain lessons and social gatherings. Such a house is not hard to find in the average provincial town. By removing partitions, two good-sized rooms may be obtained—the sala; and the kitchen, which should be large, airy, and light.

If convenient, there may be a separate bedroom. Every possible effort should be put forth to arouse in each girl a desire for privacy and for a bedroom of her own. Such desires may live in her heart and help her granddaughter to make many changes in *her* home life. However, since families of this country will probably not adopt this custom for some time to come and since most of the people are bound to sleep on the floor, our immediate duty is to help the girls to find the most healthful way of doing so.

The school kitchen should be an ordinary Filipino kitchen like the others in the town; but it must be cleaned and whitewashed, and must have plenty of chloride of lime sprinkled under it. The attention of the girls should be called to the necessity of maintaining such conditions. They should be made to understand the advantages thus gained; and if those conditions do not already exist in their own homes, they should be encouraged to establish them there. The blue-flame oil stove and the fireless cooker

may be introduced and their use encouraged, if the teacher so desires.

The principal kitchen furniture should be zinc-covered work tables, a tightly covered garbage can, the necessary cooking utensils, and the Filipino stoves with hoods and ovens. As to the cooking utensils, let the girls tell what is necessary; that is, what the average family uses at home. Have enough of these utensils for twelve girls to work with; and then, after they have been taught how to use in the best possible way the things to which they are accustomed, add to these things as the girls feel the need.

Every step in the work should be toward increasing the necessities of the people; but it must be based upon what they already have, such increase in their necessities to come gradually in proportion as they feel the need of something different.

The most important thing to teach about the kitchen is cleanliness. The girls must know the value of wood ashes, of sand, and of the *is-is* leaves, that are so much like sandpaper. They must also be taught the absolute necessity of hot water, soap, fresh air, and sunshine. They must be made to realize that a dirty kitchen brings sickness and death. They should feel that the house set aside for this teaching belongs to them while they are taking this work; and each should do her part toward keeping it clean and making it attractive. They should take turns at being housekeepers, two working together for a week at a time. While the other members of the class are cooking or sewing, these two girls will do the general housework. They must dust, attend to the plants, see that the wash-basins are clean and the water pitchers full, boil the drinking water, and do whatever general housework there is to be done. The endeavor of the teacher should be to make the girls efficient women, who when left to themselves will do the work of the home as it should be done. Every strong, capable girl that the school produces becomes an inestimable power in her community for good.

In all work in domestic science, small classes are much more satisfactory than large ones. It is impossible for a teacher to do the best work in cooking and garment cutting

with more than eight or ten pupils at one time; even when the girls have a thorough knowledge of English, small classes are essential. If there are many girls, arrangement should be made for rotation of classes on successive days. In conducting the work in plain sewing, larger classes are possible. Often there are girls in the class who are able to act as assistants to the teacher.

The teacher should show how to make the new stitches, working before the class with worsted on canvas large enough for all to see. The girls should discuss the work freely; tell the use of the stitches; and find them, if possible, on their clothing before beginning to sew. Samplers are absolutely necessary. If a girl is to become a good needlewoman, she must practice the stitches and learn to make them perfectly; but when she can do this, it is a waste of time to keep her longer on a little rag of no practical use.

In judging the work, the teacher should consider neatness, rapidity, the beauty of the finished product, and most of all, the progress made by the pupil. Each girl must do every day the best of which she is capable, and the teacher must hold her to this standard and not permit her to become careless or slight her work.

The number of girls in a cooking class should not exceed twelve, and better work can be done with eight. They should wear white caps and aprons, and their skirts should be short enough to clear the ground all around. The caps should be large enough to cover the hair, so that there will be no chance to scratch the head or arrange the hair while preparing the food. The apron should be such that the camisa may be removed and the skirt be well protected; one made like a very full chemise with short sleeves is suggested. Rings or bracelets should never be allowed in the kitchen.

In order to keep the family interested in the school work, the food prepared should sometimes be taken home. The girls may take home anything they make that will remain in good condition until the next meal time. When preparing meat pies, scalloped meat, salads, custards, etc., it is well to have them bring little bowls to school so that

the food may be sent home in the dish in which it is prepared.

It is quite as essential that the food prepared be sometimes served in school, and that this be made the occasion for teaching table manners and the necessity of table linen, individual plates, knives, forks, and other utensils.

It is preferable and has proved satisfactory for the girls to furnish as far as possible all the material used in sewing and cooking. This gives them experience in practical buying and makes them more careful not to waste material; most important of all, it teaches them to be self-reliant.

Often there are girls in the class who pride themselves on the preparation of some particular dish and who are glad to teach others how it is made; by taking advantage of this fact, the teacher may learn many useful recipes for preparing native foods. When the girls do this, they create a home interest which is often so great that the mothers offer to show the class how to prepare certain dishes.

Anything and everything that keeps the home in touch with the school work is of great value. Unfortunately most of the Filipino girls leave school before completing Grade Five. In many instances there is no reason for this except that the girl is tired of study; and as she is able to read, write, and count, her parents feel that she has all the education necessary for her and so do not urge her to continue her studies. The domestic-science work, if made attractive, will be a great incentive to the girls to continue in school.

Hygiene has its own place in the general program. The hygiene periods set aside from the time assigned to domestic science should be devoted to more intimate talks than could be made with a mixed class of boys and girls; and an effort should be made to impress upon the girls that the truths of hygiene are to be applied to everyday life.



A GOOD DOMESTIC SCIENCE HOUSE.



A VEGETABLE GARDEN.

PLATE II.

## PRIMARY GRADES TO AND INCLUDING GRADE THREE.

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Necessity of a separate domestic science building and a specially trained teacher.—Employing the play instinct to lay the foundation for the real work of later grades.—Teaching of life lessons in sewing, hygiene, manners, and housekeeping by means of dolls.

Due to the fact that so many of the older girls attend only these lower grades, it is very important that the primary schools should have a separate domestic-science building and a specially trained teacher. These girls need to be taught common-sense hygiene and home sanitation; they need to learn how to prepare wholesome everyday food and how to wash dishes, care for lamps, sweep, dust, and sew. This work should be done by a Filipino teacher, and explanation may be made, if necessary, in the native dialect. All the girls should take this work except the very smallest ones.

Where it is impracticable to have such a building, the grade teacher should have each girl make clothes for a doll, using the simplest straight patterns. The aim of this sewing is not to obtain fine needlework, but to cultivate the domestic instinct. Nevertheless, the pupils must not be permitted to form careless habits. They must make no knots except when basting, and must *cut* their thread from the work, not *bite* it. They should also be taught to use a short thread and should be given other necessary and pertinent instructions. Explain why the baby doll's clothes must not be starched stiff; why one little garment is not enough for a child in the cool season; why we wear clothes; etc.

Have each pupil weave a doll's *petate* and make a bed with sheets, pillow, pillowcase, blanket, and mosquito net. Tell

why we sleep, why we need clean bedclothes, why we should take off all our day clothes at night, why we wear a night-dress, why it is unhealthful to sleep with the head under the blanket, and why we need a mosquito net. Explain also why we should not sleep with the windows closed, and give a few simple facts regarding the care of the sick room. Let the pupils weave a doll's hammock and explain to them how it harms a baby to tie him up in a cloth and hang him from the ceiling. Many of the primary school children have the care of little ones at home and have responsibilities far beyond their years. For busy work the children may make toy furniture with toothpicks and soaked seeds. They may use the top of the desk for a playhouse and furnish it to suit their fancies or make the furniture for one room at a time, playing that the desk top is kitchen, sala, or bedroom in turn. Toy dishes may be made of clay; or the pupils may cut from advertisements pictures of different things used about the home; or these may be drawn with pencil.

The play instinct of the children at this age furnishes the opportunity for teaching them many valuable life lessons. When playing, the pupil should set the table, wash the dishes, give a party, etc., and should be required to tell in good English the thought underlying their play. Neatness, order, hygiene, and manners are all incidentally taught. The teacher is bound to weave into these lessons talks of value to the children, and it is hoped that her personal influence will help to improve the home life.

This play may also be used to cultivate the use of English and to develop the imagination of the girls. Let a pupil pick out a table, or a chair, or some other object, and tell a story about it or prepare some simple statement to be given to the teacher. Have the class spell the names of the things they have made, write statements about them, etc.

From their first day at school the children should be taught to be respectful and polite; to say "please," "thank you," and "please excuse me;" and to observe all the other little courtesies of everyday life. They should also be required to take care of plants, to dust the school room, to boil drinking water, and to do whatever there is to do that will tend to make them neat and careful.



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PLATE III.—LAYING THE FOUNDATION FOR FUTURE WORK IN  
DOMESTIC SCIENCE.

## GRADE FOUR.

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Aim of the work in sewing.—Study of native fibers, cloth, and fiber-producing plants.—Study of wool and silk.—How to remove stains and make soap, vinegar, perfume, etc.—Uses of petroleum about the house.—Recipes for preparing palatable foods from native products.—Practical talks on personal and household hygiene.—The ethics of everyday life, manners, right conduct, respectability, and the common courtesies.—Kindness to the weak, deformed, and unfortunate.

### SEWING AND TEXTILE WORK.

The object of this year's sewing is to produce efficient needlewomen. It consists of exercises in basting, stitching, back-stitching, running, overcasting, overseaming, hemming, hemstitching, feather-stitching, buttonhole stitching, darning, patching, piecing, matching stripes and plaids, and in making French seams and fell seams, and putting on bands. This work should all be done on small samplers about 7 centimeters by 14 centimeters, which when finished should be mounted neatly in a notebook. On the page opposite the sampler, directions should be written for making the stitch correctly, and an account of its principal uses should be given.

For practical sewing the girls may make aprons, caps, holders, and bags; they may also hem dusters and towels and hemstitch table linen and make anything they will find of use about the domestic-science house. It is better to have all the girls begin a new stitch at the same time, the teacher demonstrating the work on the canvas before the class. Some girls work more rapidly than others; these should be put to work making useful articles while waiting for the slower girls to finish their samplers.

In the book with the sewing samplers may also be kept compositions on textile work, on sewing, and on the utensils

used in sewing; i. e., the needles, thimbles, pins, scissors, cloth, etc. Two or three oral lessons should precede a written lesson. The compositions should be corrected before being put into the sewing notebooks.

#### QUESTIONS AND ANSWERS ON SEWING.

The girls should be made familiar with the following questions and answers, which should be copied into their notebooks, so that they may be able to talk intelligently about their work:

1. How should one be prepared for sewing?

By having a good needle, thread and thimble, clean hands, and a clean dress.

2. How should one sit?

Straight and erect, with feet squarely on the floor, and if possible, so that the light comes over the left shoulder. Never sit so that the light shines directly into the eyes, or try to do fine needlework in a poor light. Hold the work high.

3. What is a tape measure?

A piece of cloth used for measuring, with centimeters and parts of centimeters marked upon it.

4. How is the thimble used?

It is worn on the middle finger of the right hand and is used to push the needle through the cloth.

5. Why is the thimble used?

If one does not use a thimble, she sews slowly and soon has a sore finger.

6. How may the needle be polished?

The best way is to polish it with an emery. However, it may be polished by rolling it back and forth on the floor with the sole of the shoe.

7. How long a thread should be used?

One long enough to reach from shoulder to shoulder.

8. When should a knot be used?

Only when basting.

9. How may the thread be fastened without making a knot?

By sewing over the first stitch three times.

10. When should a fine needle be used and when a coarse one?

A fine needle should be used for fine material and a coarse one for heavy cloth.

11. How are threads and needles numbered?

The finer grades have the higher numbers.

12. What is basting?

Basting is sewing with long stitches to hold the work temporarily in place.

13. What is a seam?

A line of sewing joining two or more pieces of material.

14. For what is overhanding generally used?

For sewing selvages together.

15. How many times is a hem folded?

A hem is folded twice.

16. What is the rule for the first fold?

It should be as narrow as possible, no matter how wide the hem is to be.

17. Is the first fold of the hem important?

It is, because the evenness of the hem depends upon the evenness of the first fold.

18. What is the rule for a narrow hem?

The second fold should be only wide enough to cover the first.

19. What is our guide in folding a hem evenly?

A notched card or the tape measure.

20. Should basting be above or below the line where the seam is to be sewed?

Just above. It should be evenly done, so that it may be an accurate guide for the sewing.

21. For what is running used?

Chiefly for tucking and gathering. It is not strong enough for a seam.

22. How is cloth woven?

By laying threads side by side and then running another thread over and under the first ones from edge to edge and back again.

23. What are the first threads called?

They are called the warp and always run lengthwise in a piece of goods.

24. What is the thread called that is woven into the warp?  
The woof; it runs across the goods and forms the selvage.

25. What does selvage mean?

Literally, "self-edge"; that is, the edge made in the weaving.

26. Which are usually the stronger, the warp or the woof threads?

The warp threads.

27. What is the name of the machine upon which cloth is made?

The loom.

28. What carries the woof threads and weaves them into the warp?

The shuttle.

29. What is meant by "to cut on the bias"?

To cut diagonally, or from corner to corner.

30. Should cloth be cut folded or open?

If it will retain a crease, it should be cut in the crease while open; otherwise cut it folded.

31. Why do we use a bias facing?

Because it is strong and stretches readily, so that it can easily be made to fit a curve.

32. For what is the bias used?

It is used chiefly for binding and for ruffles.

33. Why should material always be cut through the selvage and not torn?

Because it strains the goods to tear the warp threads at the selvage, where they are laid closely together.

34. How should a seam of two bias edges be sewed?

It should be felled so that it will not stretch.

35. How should a seam be basted for a fell seam?

With one edge a little lower than the other.

36. How should the seam be basted for a French seam?

With the edges even, baste on the right side of the goods.

37. How should work be prepared for gathering?

By marking the middle and the quarters.

38. Why is this done?

To keep the fullness even.

39. How long a thread should be used for gathering, and should it be double or single?

Use a double thread about a palm longer than the piece to be gathered.

40. How much should be allowed for fullness in an ordinary skirt gathering?

Twice the length of the band.

41. How much for a gathered ruffle?

One and a half times the length of the band.

42. What should be the length of a buttonhole?

It should be equal to the diameter of the button.

43. How is the buttonhole prepared for working?

By overcasting the edges.

44. For what are hemstitching and feather-stitching used?

For ornamenting garments.

45. In making these stitches, what is the principal point to be observed?

The stitching should be even and regular.

46. What rule is to be observed when drawing threads for hemstitching?

Entirely finish drawing one thread before beginning to draw another.

47. What is darning?

Weaving threads with a needle in such a manner as to fill in a hole or to strengthen a worn place.

48. How should a large hole be prepared for darning?

By first basting over the hole a piece of net; then darn through the meshes.

49. What kind of thread should be used for darning?

A thread as nearly like the material as possible; whenever possible, a warp raveling.

50. How should the grain or pattern of a patch run?

So that it will exactly match the grain or pattern in the garment.

51. For what are tucks used?

Either for ornament or to allow a garment to be lengthened.

### SUGGESTIONS FOR WORK WITH NATIVE CLOTH.

Mount several samples of native cloth upon one page of the notebook, and beside each sample make appropriate notes telling of what fiber and in what province it was made and the cost. Have the girls write original compositions, telling anything of interest they know about native cloth and its manufacture.

The cloth manufactured in the Philippine Islands is remarkable for its gauziness and beauty. The most noted kinds are jusi, piña, and sinamay. The piña is the most beautiful and expensive. It is manufactured from the fiber of the pineapple leaf, and although extremely fine, it is strong and serviceable and may be laundered many times, if washed with care in cold water. It is often very beautifully embroidered and is usually écrù in color.

Jusi is manufactured from raw silk and usually has patterns of thrown silk woven in; but sometimes a little cotton or banana fiber is mixed with it. It is more gauzy than piña but not so serviceable or so costly. It is made in many colors.

Sinamay is the most common dress material and is used for clothing for both men and women. It is made of abacá or banana fiber, or of the coarsest pineapple fiber, and is serviceable and pretty. It is thicker and stiffer than piña or jusi. The best sinamay comes from Panay and the Bicol Peninsula. Piña and jusi are made chiefly in the Visayan Islands. A large amount of jusi is also produced in Batangas and Rizal. Manila and Iloilo are both good markets for all these kinds of cloth.

There is more or less cloth made of cotton all through the Islands; the Ilocanos make many kinds of cotton dress material, as well as thick cotton blankets and bath towels.

### A BRIEF STUDY OF FIBERS AND THREAD.

#### ABACÁ.

The plant which produces abacá fiber belongs to the same family as the ordinary banana, and the fiber is often called "Manila hemp." There are several different varieties of the abacá plant, all of which bear inedible fruit.

If possible, have the class visit an abacá field to see the growing plant. Notice the differences between the abacá plant and the ordinary banana. Observe the work of stripping; that is, extracting the fiber from the stem. Machines have recently been invented which strip as much abacá in an hour as many men working in the old way could strip in a day.

If not possible to visit an abacá field, study the *sabá*, a very common fiber-producing plant also belonging to the banana family. If this can not be had, get some abacá fiber for study in the class room. By using a portion of the stem of the ordinary banana plant, the teacher may illustrate the process of stripping. Notice the length of the fibers.

For what purposes other than making cloth is abacá fiber used? Practically all of the fiber sent to the United States is made into rope or twine. In Switzerland, much of the fiber is used to make hat braid. Sometimes it is woven directly into hats.

Study the making of sinamay cloth from abacá fiber. In what provinces of the Philippines is the best sinamay made? Study different samples of sinamay, mounting them in the notebooks with appropriate notation. Study the question of selling price and markets for this kind of cloth.

Another kind of cloth made from abacá fiber is called "pinokpok." It has a very close weave and after it is woven, it is placed in a mortar and beaten with a pestle to make it soft and pliable. Sometimes a little cotton fiber is mixed with abacá in making pinokpok.

#### PINEAPPLE.

Study a pineapple plant and have the pupils tell what they know about its usefulness to mankind. Take a mature leaf from the base of the plant and lay it in water some eight or ten hours to soften the pulp. Place the leaf top side downward upon a perfectly plane surface. Hold the base of the leaf with one hand and with a clam shell, or a piece of broken chinaware, begin about 2 or 3 inches back from the apex of the leaf and scrape off the pulp, always scraping toward the apex. Continue in this manner until

the entire under surface of the leaf is cleared of pulp and a layer of fibers exposed. The first fibers exposed are the coarsest ones in the leaf and are used for making sinamay. Take these out by inserting the thumb nail or a dull smooth peg under them near the apex of the leaf and pulling upward so that the fibers will strip out toward the base. There are usually two layers of coarse fibers in a leaf. When these are all removed, scrape the leaf again and take out the fine fibers. Wash the fiber in running water and comb it slowly with a coarse, smooth comb to remove all remaining pulp.

Study the making of piña cloth from pineapple fiber. Mount samples of different grades of piña in the notebooks with appropriate notation. The cloth used by women for stiffening the bottoms of their skirts is often made of the coarsest sinamay fibers. This cloth is also used by housewives for sieves and strainers.

Unfortunately the work of making piña cloth is no longer carried on so extensively as in former years; neither is the quality of the cloth now made so good. This is due to the fact that, because the making of other kinds of cloth is more remunerative, the people no longer take much interest in piña as a commercial product.

Compare piña cloth with cloth made from abacá fiber, noticing points in which they are alike and those in which they differ.

In Singapore, Hawaii, and many other places, hundreds of hectares of ground are planted with pineapples. The fruits are sold in the local markets or are canned and exported to other parts of the world. Outside of the Philippines, not much use is made of the fiber for cloth making.

#### COTTON.

Get a cotton plant and have the pupils tell what they know about it. The plant should be studied with reference to its use to man.

Have pods of kapok (Tagalog, *bulak*; Bisaya, *doldol*) and pods of cotton; let the pupils find the difference in the fibers. Explain the use of kapok and of cotton. Tell why kapok is not used for cloth.

Find the seeds entangled in the fiber. Tell about the cotton gin and how it reduced the price of cotton cloth; show pictures of cotton mills. Mount samples of different kinds of cotton cloth; tell where each was made and the price per yard.

#### WOOL.

Talk about wool and have the pupils write compositions. A sample of wool and a piece of woolen cloth should be sewed to the top of a page in each girl's notebook.

Wool is the soft hairlike covering that grows on domesticated sheep. Cloth made of wool is thick and warm. It is the cloth used chiefly for clothing and blankets by people living in temperate countries, and it is very comfortable in cold weather. Compare cotton cloth with woolen cloth, noticing the points in which they are alike and those in which they differ. Burn a bit of each and notice the difference between the odors.

Sheep were the first animals domesticated and people knew how to make cloth of wool long before they could make either silk or cotton cloth. Woolen cloth costs as much as silk, but it is much more serviceable. Most of the wool is grown in Australia, South America, and South Africa, and most of the woolen cloth used is made in Great Britain and the United States.

Let the pupils name some articles they have seen made of wool.

#### SILK.

If possible, have silkworms and cocoons for demonstration. If silkworms can not be had, find some other worm that spins a thread and a cocoon that shows weaving. Have samples of silk cloth and silk thread. Tell about the cocoon, the life of the worm, and the winding of the thread. Tell where the silkworm is grown and where the cloth is manufactured. The Chinese were the first to manufacture silk, and they kept the process a secret for many years. In Europe in olden times silk was worth its weight in gold. Try to interest the girls in silk culture. The care of worms is easy and profitable work and this industry if developed here would bring large returns.

Cut moths out of bright colored silk and sew them at the top of the pages on which the compositions are written.

THREAD.

Have the pupils bring as many different kinds of thread as they can find; let them mount samples of these in the notebooks, telling the principal use and the cost of each, of what it is made, and where it was manufactured. They should have cotton, woolen, linen, and silk threads of various kinds.

SOME MODELS FOR COMPOSITION WORK ON SEWING MATERIALS AND UTENSILS.

The following are samples of compositions written by Grade Four girls and will serve to show what is expected in this work. The compositions have been corrected and are based on questions written on the blackboard.

ABOUT NEEDLES.

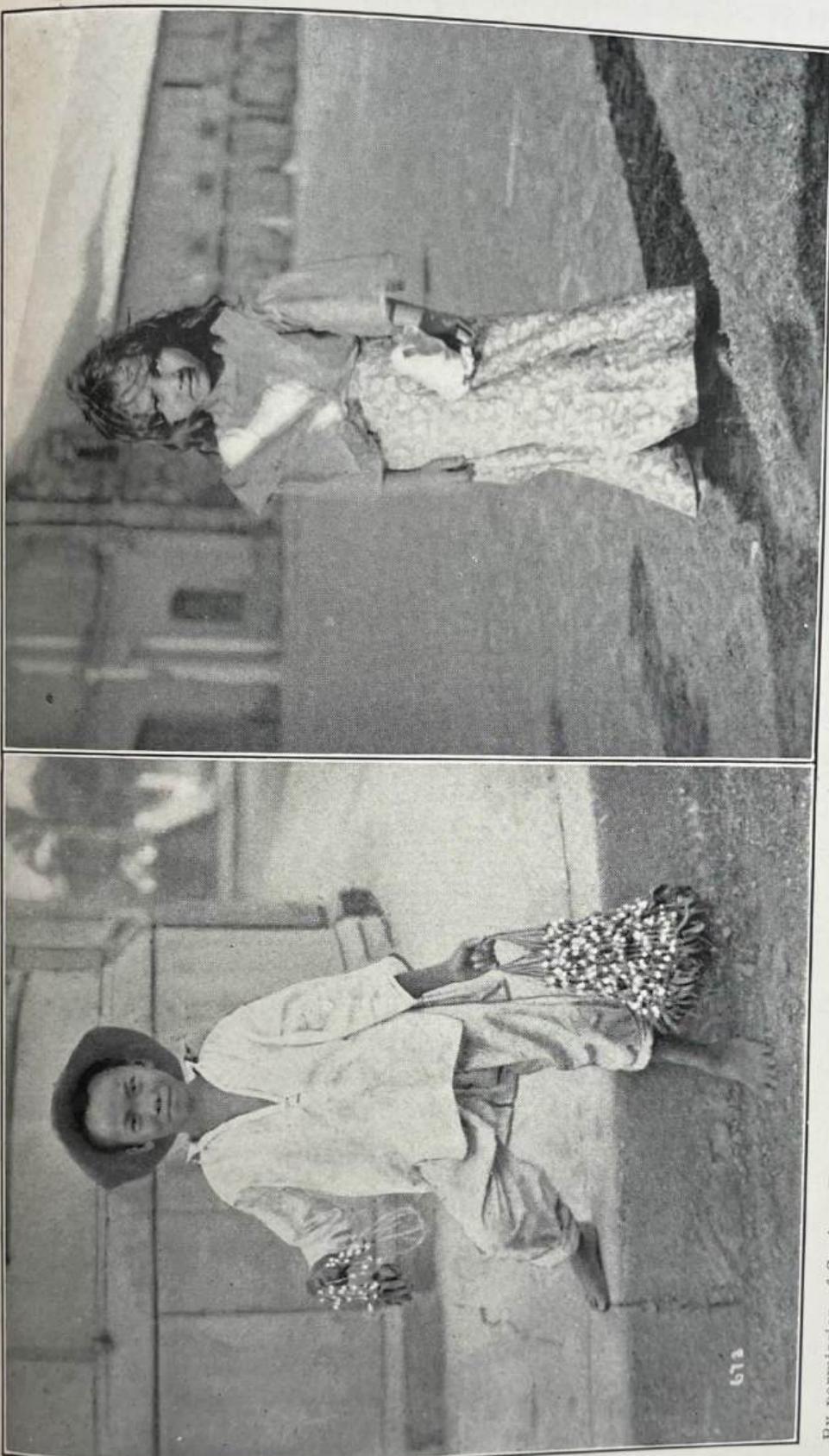
Steel needles were first made in Bavaria five hundred years ago; but history tells us that five thousand years ago people in Egypt used needles made of wood. My needle is very small, but many people worked on it before I began to sew with it. It was made from steel wire. First the wire was cut the right length; then it was made straight, one end was made sharp, and in the other end a hole was made for the thread. We call that hole the eye. Then the needle was made hard and strong so that it would sew stiff cloth. It was made clean and bright and put into a little package with many other needles.

My needle was manufactured in Germany. Many needles are made in the United States. The largest needle factory in the world is in England.

We pay 5 centavos for a package of twenty needles. I like to sew with a fine, sharp needle.

THIMBLES.

A thimble keeps my finger from getting hurt when I sew and it helps me push the needle through the cloth. Most thimbles are made of metal, such as gold, silver, steel, brass, or aluminum. Some are made of celluloid.



By permission of Squires, Bingham Company.

PLATE IV.—PRIMARY SCHOOL CHILDREN.

Some thimbles cost much money and are very elegant; they are made of gold and adorned with precious stones. I never saw that kind of thimble. My thimble is made of silver and cost 2 pesetas. I wear it on the middle finger of my right hand. I do not like to sew with a thimble. I should like to see a sailor sew with a thimble on his thumb.

#### COTTON.

Cotton is the most important vegetable fiber in the world. Many different kinds of cloth are made from cotton. Some cotton cloth is coarse and ugly and some is fine and beautiful like silk.

When my grandmother was a little girl, cotton cloth cost more than silk does to-day, because the people did not have good machinery like that which they have now. The Ilo-canoss know how to make cotton cloth, but they do not have big machines like the ones used in Europe and America. Cotton grows in all warm countries.

The United States and England manufacture more cotton cloth than other countries. My handkerchief is made of cotton. My dress is not made of cotton, but Juana's dress is.

#### SILK.

The softest and most beautiful cloth in the world is made of silk. Silk thread comes from the cocoon of a little insect called the silkworm. This insect, like many others, makes a cocoon when it changes from a worm to a moth. The cocoon is woven of one strong fine thread. The color of the silk in the cocoon is light yellow. People can dye it any color they want. The silkworm eats the leaves of the mulberry tree. Some mulberry trees grow in the Cagayan Valley. I have seen a mulberry tree.

#### HOUSEKEEPING.

#### REMOVING STAINS.

Fruit stains while fresh may be taken out by stretching the stained part of the material over a bowl and pouring boiling water through it from a height of several inches until the stain disappears.

For removing iron rust and the stain produced by the sap of physic nut (tuba-tuba), dissolve a little salts of lemon in cold water and wet the stain with this solution. After a few minutes wash in cold water and place in the sunshine. Repeat, if necessary, until the stain disappears. CAUTION: This can be used only in the case of white clothing, as the solution removes color.

Lemon juice and salt will remove ink and many other stains. Saturate the stained cloth with lemon juice, rub salt into it, and place in the sunshine. Repeat many times, if necessary.

Chocolate stains are hard to remove; soak them in cold water with borax and then pour boiling water through them.

Blood stains should be soaked in cold water and then washed in lye made by pouring cold water through the ashes of rice straw.

Mildew is very obstinate, but may be removed with patience. Make a paste of soft soap and powdered chalk and rub it well into the cloth; keep it moist and leave it in the sunshine. It may take several days to remove the stain.

Ink stains will disappear if soaked in caraballa milk a day or two. Allow the milk to sour in the goods. This treatment may be applied to white goods only, as it takes out color.

Rub iron rust over with sulphate of potash; then wash well in lemon juice and afterwards in cold water.

In obstinate cases of ink, rust, and mildew, the following fluid will be found satisfactory. The recipe is given in quantity, so that each member of the class may have some to take home.

2½ kilos of washing soda.  
4 liters of cold water.

While this is boiling, add ½ kilo of chloride of lime and stir well; set aside to settle. Strain through a cloth and cork up in bottles. Put the stained clothes into 10 liters of water with two handfuls of chipped soap and one-half liter of he fluid. Let them boil, raising them up once in a while with a clothes stick. If the marks do not disappear, add a little more of the fluid, but not too much, as it will eat into the cloth. Rinse thoroughly and hang in the sun to dry.

### MAKING SOAP.

2½ kilos (5 lbs.) of cheapest grade olive oil, or any clean fat.  
 ½ kilo (1 lb.) of Babbett's lye.  
 ¼ kilo (½ lb.) of borax.  
 2 tablespoonfuls of ammonia.

Dissolve the lye in six cupfuls of cold water. When thoroughly dissolved, add the borax and ammonia; then stir in the oil slowly. Stir for eight minutes; the mixture should then look like honey. Have ready a small wooden paper-lined box, or a pasteboard box; pour the soap into it, and when firm, cut into cakes and put away to harden.

### MAKING VINEGAR.

The word "vinegar" means sour wine. The best vinegar is made from fruit juices. In southern Europe it is made from the poorest wines; in America from apple juice; and in the Philippine Islands from sugar cane, coconut, buri, or nipa sap, or from the juice of various fruits. It is clear, red, or brown, taking its color from that of the substance from which it was made.

### EXPERIMENT.

Dissolve one-fourth kilo of sugar in a liter of water, and put in a little "mother" from an old vinegar barrel. This may be obtained from some Chinese merchant. Cover with a clean white cloth and leave for three months. The vinegar plant known as "mother" is found in all old vinegar barrels; it is a fungus growth similar to the yeast plants.

Very satisfactory vinegar may be made from several of the native fruits, which are well worth experimenting with.

### MAKING PERFUME.

Gather the petals of the ylang-ylang, sampaguita, orange blossoms, or any flowers having a strong sweet smell. Put them into a large-mouthed bottle three-fourths full of olive oil; after they have been in the oil twenty-four hours, put them into a coarse cloth and squeeze the oil out. Put this oil back into the bottle and fill again with fresh petals. Repeat until the oil has the strong sweet odor of the flowers. The process requires many flowers and should be repeated every second morning for at least a month. Mix the oil with an equal quantity of pure rectified spirits, and shake night and morning for two weeks; it may then be poured off ready for use.

The petals of these sweet-scented flowers may be dried and tied in tiny bags made of gauzy native cloth to be laid among the clothes and table linen. The dried leaves of the rose geranium impart a particularly fragrant perfume. These bags may be made very dainty, and may serve as attractive little remembrances for birthdays, Easter, and other like occasions.

#### USES OF PETROLEUM.

Petroleum, although an excellent disinfectant, is not a good medicine; it should not be used as a family remedy and general cure-all. It has many uses. To avoid ants, saturate rags with the oil and hang or lay them near the ant runs; this will cause the ants to disappear. To keep ants off a table or bed, tie rags about the legs and saturate them with oil.

A beautiful polish may be given to glass or mirrors by putting a few drops of petroleum into the water with which they are washed. To clean marble-topped tables, wipe first with a cloth dipped in petroleum; then wash with soap and water.

For cleaning painted and varnished wood, petroleum is unsurpassed. A cloth dampened with it is excellent to wipe polished floors.

A little petroleum upon the surface of any standing water will kill and prevent the breeding of mosquitoes.

Petroleum is a safe and good household fuel when burned in stoves intended for it; but to pour it into a stove to kindle a fire is a very dangerous proceeding. A better way is to fill an old oil can with ashes, then pour in sufficient petroleum to saturate them. A tablespoonful of the ashes is enough to keep the blaze going until the wood ignites. In this way there is no danger of setting the house on fire. The can containing the saturated ashes must be kept in a safe place away from the fire.

#### COOKING.

This year the pupils are to learn to prepare the common market vegetables in a wholesome and appetizing manner.

They will also learn to prepare rice and corn properly. During the year, boiled rice should be served as a vegetable; it should also be served with slices of well-ripened banana and sugar and milk. Use the following recipe for making a—

#### Rice pudding.

Four cups milk, three tablespoonfuls cold boiled rice, four tablespoonfuls of sugar, one-half cup of raisins. Add the rice to the milk. Add the sugar and the raisins. Flavor with nutmeg, turn into a greased pudding dish, and bake one-half hour.

Make a study of eggs. Look at the shell under a microscope, if available. Note that it is porous. Tell why eggs spoil, why they should be washed, and how they may be kept in good condition the longest time. Make tests to see whether an egg is fresh. Drop it into cold water; if it sinks, it is fresh. Shake it; if it makes no sound, it is fresh. Hold it to the light; if it is clear, it is fresh. A fresh egg has a thick, rough shell.

#### Soft-boiled eggs.

#### EGG RECIPES.

For two eggs allow a pint of water. Put the water into a saucepan and let it come to a boil. Drop the eggs in very carefully, cover the pan, and remove at once from the fire. At the end of ten minutes the eggs will be ready to serve.

#### Hard-boiled eggs.

Drop the eggs into boiling water and boil ten minutes. Do not allow them to boil rapidly. Drop them into cold water when taken from the fire.

#### Scrambled eggs.

Put a teaspoonful of lard into the frying pan. Stir two eggs gently until the yolks and whites are mixed. When the lard is hot, turn in the eggs and stir continually until they are set. Salt and serve at once.

#### Poached egg on toast.

Only strictly fresh eggs can be poached. Have a frying pan half full of boiling water. Break the eggs into a saucer one at a time. Lift the frying pan off the stove, slip the eggs into the water, and leave until the whites set. Lift out with a broad piece of tin, and place them on slices of toast bread about one centimeter thick. Sprinkle salt on each. Serve hot.

## VEGETABLES.

*Beans.*—There is a great variety of beans to be had in the native markets. As their flavor is strong, they are much improved by blanching; that is, changing the water in which they are cooking. Put the beans into a stew pan full of boiling water and boil for five minutes; then drain in a basket or colander and pour cold water over them. Put again into boiling water and proceed as usual.

String beans should be served only when they are young and tender. Remove the ends and string carefully. When the long sitao pods are used, cut them across diagonally making ribbons about an inch and a half long. These may be boiled with pork and served hot or drained and cooled and served with French dressing into which a generous amount of onions has been shredded.

String beans may also be cooked in water, drained and reheated in a frying pan with pork fat, salt, and pepper.

The flavor of the lima beans is much improved by cooking with them a handful of mint leaves.

**Sitao.**

Shell and wash the beans, put them into boiling water, cook for five minutes, drain in basket or colander, and pour cold water over them. Put again into boiling water, add a handful of mint leaves, and boil until soft. Drain; add salt, pepper, and butter, and a half cupful of hot milk. If coconut milk is used, the butter may be omitted. The sprigs of mint should be removed before the beans are sent to the table.

Sitao may be boiled with pork after they have been blanched. When they are soft, drain and fry in pork fat, salt, and pepper until brown. Then add a teaspoonful of sugar and cook a minute longer. This gives a rich flavor.

**Patani (and other shell beans).**

Shell, and lay in cold salted water for half an hour. Cut into small pieces a generous piece of pork; cook in a kettle with little water. When the pork has been cooking for some time, put in the shelled beans and some salt; cook until tender. The beans are not to be drained, but seasoned well with salt and pepper.

**Patani.**

Blanch as in the case of sitao. Cook until tender in boiling water, adding the mint or not as fancy dictates. When soft, drain, put

into a dish, and toss about over a lump of butter. Season with salt and pepper. Serve hot.

**Patani puree.**

Boil the patani as directed in the preceding recipe. When soft, mash fine. Put one quart of milk to boil. Put into it one onion chopped fine, a laurel leaf, and two cloves. When the onion is cooked, strain the milk into the patani and return to the fire. Put one tablespoonful of butter into one of flour and stir this into the soup. Stir continually until it boils and thickens. Then add salt and pepper and serve.

**Calamismis.**

This is a peculiar-shaped fluted seed pod, the sections of which cut across look like little four-pointed stars. The pods should be cut across, washed, blanched, and cooked as any of the string beans.

**Mongos.**—The mongo is a small round seed sometimes green and sometimes black. It looks like a small pea and is rich in both nitrogenous and carbonaceous elements. The girls should be encouraged to use this legume as an article of diet in their homes, as it is one of the most valuable and at the same time inexpensive foods.

Mongos may be washed, scalded, and boiled with pork. Season generously with salt and pepper.

Or, wash, cover with cold water, and bring quickly to a boil. Drain, cover with boiling water, and boil until they mash easily under pressure. Drain again. Put two tablespoonfuls of lard into a frying pan. Cut a large onion into slices and fry until it is clear and soft, but not brown. Add the mongos. Salt and pepper, and stir over the fire fifteen minutes.

**Mongos and rice.**

Boil the mongos as above directed. Wash and boil one cup of rice. Put two tablespoonfuls of lard into a frying pan. Add an onion cut into slices, then the boiled mongos, then the boiled rice, and stir over the fire fifteen minutes. Add salt and pepper to taste and serve with tomato sauce.

**Mongo gruel (for the sick or for young children).**

Wash the mongos thoroughly, dry them, then grind them in a coffee mill. Stir this meal into boiling water and boil forty-five minutes. Add milk, salt and pepper to taste, and thicken slightly with a little flour.

Or, take one and one-half cups of water, one tablespoonful of meal, one-sixth teaspoonful of salt. Pour the meal into the boiling salted water. Cook fifteen minutes stirring constantly. Then cook for

three hours in a double boiler or over night in a fireless cooker. Serve with milk or with coconut milk.

#### Mongo soup.

Wash the mongos, cover with cold water, and bring to a boil. Drain, add four liters of cold water, heat slowly, and simmer gently. A ham or beef bone may be added. When the mongos are tender but still unbroken, add seasoning and a half liter of mixed chopped vegetables which have been slowly cooked in a little pork dripping until tender and slightly browned. Continue cooking until the mongos are pulpy; then press through a sieve, rubbing through as much pulp as possible. Return to the fire with any necessary seasoning, boil up, and thicken slightly with a little flour paste. If this is not done, the pulp will sink and separate from the body of the soup. In serving, pass toasted or fried bread croutons. Add one or two quartered hard-boiled eggs and some thin slices of lemon just before serving.

#### Hulled corn.

Put three cupfuls of clean guava wood ashes or other hardwood ashes into two liters of cold water and boil half an hour. Leave until the ashes settle to the bottom. Pour off the clear water, which should feel a little slippery. Put in two liters of dry corn, add more water so that the corn is well covered, and boil until the hulls begin to come off. Drain and wash the corn in cold water, and rub thoroughly with the hands to remove the hulls. Wash until there is no taste of the lye; then put into clear water and boil until tender.

Hulled corn is easily prepared and is a wholesome food. It may be eaten with shredded coconut and salt or with shredded coconut and sugar. Also it may be reheated in pork or bacon fat or served hot with a thin white sauce.

#### Corn boiled on the cob.

The corn should be picked while it is young and tender. Try the kernels with the finger nail. If the kernel is dry, it is too old to be good. Corn must be cooked as soon as possible after picking, as it soon loses its sweetness. Remove the husk and all the silk. Put into a kettle of boiling salted water and cook rapidly for five minutes after the water resumes boiling. If the corn is above water and steamed, it will require fifteen or twenty minutes. Serve immediately.

#### Fried corn.

Cut two cupfuls of corn from the cob. Cut first through the center of each row of kernels, so that the pulp and juice may be taken without the hulls. Sift over this two tablespoonfuls of flour, and salt and pepper to taste. Put over the fire one pound of bacon sliced thin and cook until all the fat is extracted; then take out the meat and fry the corn in the bacon fat until it is brown and tender (about twenty minutes). It must be stirred constantly to prevent burning.

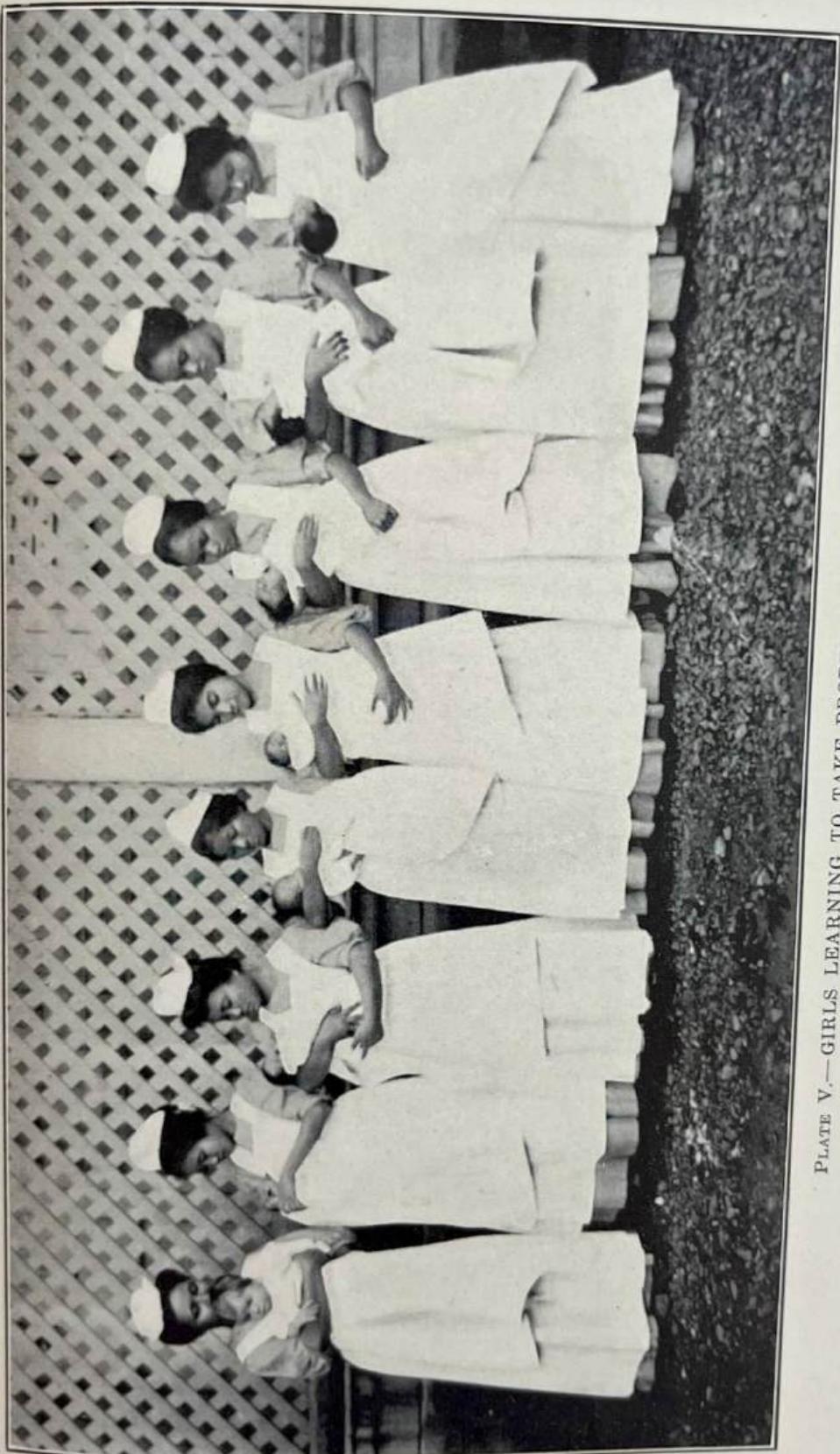


PLATE V.—GIRLS LEARNING TO TAKE PROPER CARE OF CHILDREN.

*Old-fashioned fried corn.*

Cut two cupfuls of corn from the cob. Put two tablespoonfuls of pork fat into the frying pan. When hot, add the corn with one teaspoonful of salt and one-fourth of a teaspoonful of pepper. Cover and cook for about twenty minutes, stirring frequently.

*Corn chowder.*

Fry one-fourth kilo of fat pork until all the fat is extracted. Remove the meat and fry in the fat one large American onion cut fine. Cut two large American potatoes into slices. Put those also into the frying pan together with two cupfuls of corn cut from the cob. Cover this mixture with two cupfuls of boiling water and cook slowly about fifteen minutes; then add two cupfuls of boiling milk thickened with one tablespoonful of flour, and salt and pepper. Toast, *pan de caña*, or crackers should be served with this soup.

*Scalloped corn and tomatoes.*

Cut a cupful of corn from the cob; peel and slice three medium sized tomatoes; and mince one large onion. Season the corn with one teaspoonful of salt and one-fifth of a teaspoonful of pepper. Grease a baking dish; put in first a layer of the tomatoes, and sprinkle with one-half teaspoonful of salt, one teaspoonful of sugar, and a little of the onion. Cover lightly with crumbs and then add a layer of corn. Continue in this way until the ingredients are all used. Cover the top with crumbs and add two tablespoonfuls of pork fat. Bake in a moderate oven.

*Camote and corn scallop.*

Left-over bits of corn and camote may be made into an excellent scallop by filling a baking dish with alternate layers of corn and camote and seasoning each layer with salt, pepper, and butter. The top layer should be of camotes and should be covered with a sauce made as follows: Brown together one tablespoonful each of butter and *caramelo*; then stir in one tablespoonful of flour. Add one cupful of milk and one-quarter teaspoonful of salt and cook a few minutes longer. Bake the scallop for half an hour in a moderate oven.

*Fried corn-meal mush and pork.*

Have the water boiling with sufficient salt for seasoning. Stir in the meal gradually, sifting it slowly through the fingers of the left hand while stirring with the right. Mash must cook very thoroughly. Stir while cooking. When the mush is cooked, put it into brick-shaped baking tins and when cold cut into slices and fry in pork fat until crisp and brown.

Or, cut slices of the cold mush and dip into beaten egg and bread crumbs and fry in deep fat, like croquettes.

*Hoe cake.*

Put two cupfuls of corn meal into a bowl, and add one-half teaspoonful of salt; pour over it enough boiling water to wet the meal,

and leave it ten minutes. Then add cold water until the batter will drop nicely from a spoon. Bake the same as hot cakes on a frying pan. When done, put a piece of crisp bacon or pork on each piece and serve.

#### Creamed camotes.

Select camotes of about the same size and shape, wash them well, and put them into boiling water. Cook until soft; take from the water; remove the skins; mash them fine. Into two cupfuls of mashed camotes put one tablespoonful of fat that has been fried from pork; also three beaten eggs and one cupful of caraballa milk. Add plenty of salt, and beat until light and creamy.

#### Roasted camote.

Select camotes of the same size and shape, and bury them in hot ashes deep enough so that they will not burn. Rake hot coals over them and leave for one hour, or longer if they are very large. Before serving, rub well with a clean cloth to take off all the dirt and ashes. Serve hot with gravy, or with fat that has been fried out of pork.

#### Fried camotes.

Remove the skins from boiled camotes and cut them lengthwise. Put three tablespoonfuls of lard into the frying pan; sprinkle the camotes with salt and pepper. Throw them into the hot fat; brown first on one side and then on the other. Serve very hot.

#### Camote pudding.

Grate four camotes. Add a half liter of rich milk, three eggs well beaten, and one-third cupful of pork fat. Salt; flavor with a very little nutmeg. Put into a hot greased baking-dish and bake until done.

#### Caramel camotes No. 1.

Wash and scrape the camotes; put them into boiling salted water and cook until soft. Cut into slices lengthwise; roll in brown sugar; and fry in deep, hot fat.

#### Caramel camotes No. 2.

Boil the camotes and cut into slices lengthwise. Grease a baking pan well; lay the slices in the pan and sprinkle thickly with *panocha* (a kind of brown sugar). Brown in the oven.

#### Eggplant (*tálong*) fried.

Peel the eggplant and cut into slices a centimeter thick. Lay them in cold salted water for half an hour. Wipe each slice dry and dip first into beaten egg and then into bread crumbs. Fry in deep boiling fat.

#### Stuffed eggplant.

Wash a large eggplant and cook it in boiling salted water for ten minutes. Let it grow cold and cut it lengthwise into halves. Scrape

out the center, leaving the sides of the vegetable unbroken. Chop the pulp fine and add to it a cupful of chicken which has been boiled and chopped; also one-half cupful of chopped onion, a quarter of a cupful of bread crumbs, and a tablespoonful of olive oil or pork fat. Salt and pepper to taste. Mix well and add enough of the water in which the chicken was boiled to make a stiff paste. Fill the hollow eggplant with this mixture. When full and rounded, cover the top with bread crumbs and put into a frying pan. Pour three cupfuls of chicken broth about it and cook for an hour; then remove the eggplant to a hot platter. With a little flour mixed with cold water, thicken the gravy left in the pan; stir constantly. Pour this sauce about the eggplant.

#### **Eggplant with tomato and pepper.**

Prepare the eggplant and remove the inside as in the previous recipe. Mix together the pulp of the eggplant, a cupful of ripe chopped tomatoes, one green pepper chopped fine, and a cupful of bread crumbs. Season with salt and pepper and onion juice. Fasten the two halves together with a bamboo skewer and fry; when done, remove the skewer and pour the sauce over the eggplant.

#### **Boiled squash.**

Wash, cut into pieces, pare, and remove the seeds. Place in a basket and put the basket into boiling salted water. Cook about twenty minutes, until it becomes tender. Remove basket, drain thoroughly, mash, and season with one tablespoonful of pork fat; salt and pepper.

#### **Baked squash.**

Cut the squash in two. Remove the seeds and bake until tender. On taking from the oven, season generously with salt and pepper and pork fat.

#### **Fried squash.**

Peel and slice the squash and boil for five minutes. Remove from the fire and drop the slices into cold water. Wipe them dry, drop them into beaten egg, and then into bread crumbs; fry in deep hot lard. Drain, and sprinkle with salt and pepper.

#### **Squash custard.**

Peel and slice the squash. Cut into small pieces and boil until soft; drain, mash fine, and press through a colander or basket so there will be no lumps. Add one teaspoonful of pork fat and one-fourth teaspoonful of salt to each cupful of mashed squash; leave until cold. When cold, take two cupfuls of squash, two cupfuls of coconut milk or caraballa milk, one-half teaspoonful of grated nutmeg, one-half teaspoonful of powdered cinnamon, and one-half teaspoonful of powdered ginger; mix well and sweeten with panocha (brown sugar). Beat four eggs until light; add these to the mixture. Pour into a deep pan and bake about thirty minutes, or cook it the same as the native custard (Spanish, *flan*).

**Ampalaya (amargoso).**

Cut into thin slices and cover with salt; rub and squeeze to take out the bitter juice; then wash and soak in cold salted water for half an hour or longer. Fry one-fourth kilo of pork; when the meat is nearly cooked, fry a generous amount of onion or garlic with it. When this is sufficiently cooked, put the amargoso with it in the frying-pan and pour over all enough boiling water to cover the vegetables. Boil until tender. Season with salt and pepper, and serve.

**Amargoso with shrimp.**

Cut the amargoso into thin slices and put into a kettle of cold water. Bring to a boil and drain. Repeat this twice, and in the third water cook until the vegetable is tender. While the amargoso is cooking, pour boiling water over the shrimp and remove the shells. Put the shrimp into a frying pan with a little hot fat and cook for two minutes. Then put them into the kettle with the amargoso as soon as the vegetable is tender; cook for a few minutes and serve hot.

Green papaya, bamboo, or pechay may be prepared with shrimp in the same way. The leaves and stems of the pechay should be cut up together.

**Green papaya.**

Green papaya may be cut into pieces, stewed until soft, and covered with a thin white sauce seasoned to taste. (For making white sauce, see following recipe.)

**White sauce.**

One tablespoonful of lard, one tablespoonful of flour, one cup of milk, salt and pepper to taste. Put the lard into the frying pan, add the flour, and mix until smooth. When this mixture begins to boil, add the milk slowly, stirring constantly until it boils. Season and use at once.

**Greens.**

There are many different leaves to be found in the market which are wholesome and more or less palatable served as greens. The most common and perhaps the best are the camote tops, the mustard leaves, the pechay, and radish tops.

Mustard and pechay may be cooked in salted water, chopped, and served with a white sauce. Any of the greens may be boiled until tender in slightly salted water with a generous piece of pork. When done, cut through and through in every way to facilitate serving them. Arrange the greens in the middle of a platter; season with salt, oil, and vinegar; and lay slices of raw onion and hard-boiled eggs over the top. Slice the pork and use it as a garnish about the edge of the platter.

**Cucumbers, raw.**

Keep the cucumbers in cold water until ready to serve. Peel quickly and slice thin. Make a French dressing of one part vinegar

and three parts olive oil. Salt and pepper to taste and pour over the cucumbers.

#### Cucumbers stewed.

Pare the cucumbers and cut into rather thick slices; cover with good chicken broth and boil until tender. Take out the cucumber and thicken the broth with a tablespoonful of flour. Season with pepper and salt and turn this over the stewed cucumber and serve at once.

#### Gumbo.

This may be made with chicken, shrimp, or oysters. Fry a minced onion until brown. Add to it one quart of sliced okra and fry well, stirring all the time to prevent burning. If chicken is used, it must be previously stewed tender. Pour over the okra two liters of chicken broth and boil down to one liter. If using oysters or shrimp, substitute boiling water in place of the chicken broth. When the soup has boiled sufficiently, add the meat and three ripe tomatoes chopped fine. Season to taste with salt and pepper and serve with boiled rice.

#### Boiled okra.

Wash one liter of young white okra in cold water. Cut it into thin slices and put it into a stewpan with a cupful of water and a teaspoonful of salt. Cover the stewpan and cook gently for a half hour; then add butter, one tablespoonful of vinegar, pepper, and salt. Boil up again and serve.

#### Fried sweet peppers.

After taking out the seeds and the tough white fiber, cut the peppers into strips crosswise. Lay them in cold salted water one-half hour; then fry in a little lard. Lay about steak or chops and serve.

#### Sweet peppers with rice.

Seed the peppers and soak in salted water as in the preceding recipe. Drain and chop rather coarsely and fry with a chopped onion. Add to this a cupful of good chicken broth or beef broth and stir into it boiled rice. Salt generously. Cover for five minutes and serve.

#### Stuffed peppers.

Cut off the stem end and seed the peppers; then lay them for three minutes into salted boiling water. Afterwards put them into cold water and soak half an hour. Drain and wipe dry and fill with a mixture of boiled rice and chopped meat. Replace the end and cook twenty minutes in one-fourth inch of soup stock; then fry.

Peppers may be filled with fish, beef, chicken, or any chopped meat. The stuffing should be one-half bread crumbs or boiled rice and should be well seasoned with tomato sauce.

#### Rice and shrimp.

Boil and peel three dozen fresh shrimp. Fry half a cupful of sliced onion and add to it one cupful of well-washed uncooked rice.

Brown, stirring constantly. Flavor to suit the taste. When the rice is brown, cover it with hot water and let it cook until soft. Mix with the shrimp and serve.

#### Rice and beans.

Soak over night a half liter of washed red ("cow" or field) beans. Drain, cover with fresh cold water, and cook slowly. In an hour add one-fourth kilo of fat bacon freed from rind, and simmer until the beans begin to soften. Season to taste with salt and plenty of red pepper, then add a half liter of washed rice and continue the slow cooking until the beans and rice are tender. During the latter half of the cooking, keep just enough liquid to prevent burning. Serve on a platter, the bacon in the center.

#### Rice and dried fish.

Wash half a kilo of boned dried fish, cut it into narrow strips, put into cold water, bring to boiling point, and strain. Put into an iron frying pan two tablespoonfuls of suet; add two onions chopped fine; shake this over the fire for a moment; and add the fish and one cupful of carefully blanched rice. To blanch, wash the rice, boil fifteen minutes, and drain. Pour over the rice a quart of strained tomato, add a teaspoonful of salt and a dash of pepper, cover the kettle, and stew slowly for twenty minutes. Then add a tablespoonful of pork fat. Dish out on a platter and garnish with hard-boiled eggs.

#### Baked rice.

Two cupfuls of cooked rice, one-half cupful of small bits of cheese, two cupfuls of milk, two eggs, one large spoonful of butter, and one teaspoonful of salt. Mix well, and place in a baking pan with cheese and a little butter on top. Bake half an hour.

#### Radishes.

Pare the radishes, cut them into cubes, cover them with salted boiling water, and cook half an hour. Drain, turn them into a dish, and pour over them a white sauce. Serve.

Radishes may be sliced and boiled till tender, mashed, and seasoned with salt, pepper, and butter.

#### Browned radishes.

Pare the radishes. Cut into slices crosswise and boil until tender. Put two tablespoonfuls of lard in a frying pan. When the lard is hot, add the radishes and sprinkle over them one tablespoonful of white sugar. Stir and turn carefully until the slices are browned. Salt and pepper, and serve.

#### Onion, boiled.

Take one-half dozen onions, one tablespoonful of flour, one-fourth liter of milk, and salt and pepper to taste. Put the onions into cold water and remove the skins. Put them into a kettle of boiling water,

add a teaspoonful of salt, and boil until soft (about one-half hour). Then drain and turn into a dish. Put a tablespoonful of olive oil or pork fat into the frying pan, add the flour, and mix until smooth. Then add the milk and stir continually until it boils. Add salt and pepper and pour over the onions.

#### Fried onions.

Cover the onions with cold water and remove the skins. Cut the onions into slices. Cover with boiling water, add a teaspoonful of salt, and boil twenty minutes. Drain; add a large tablespoonful of lard; and fry for twenty minutes, stirring frequently. Add salt and pepper, and serve.

#### Fried onions to serve with beefsteak.

Prepare three tablespoonfuls of minced onion and cook for five minutes in hot pork fat. The onions should be tender and clear, but not crisp. After the steak is dished, spread the hot onions thickly over it.

#### Stuffed onions.

Boil five large onions gently until tender but not broken. Drain. When cold take out the centers and chop half of them fine; add one tin of devilled ham and moisten with cream and the yolks of two eggs. Fill the centers of the onions and put a bit of butter on top of each. Set side by side in a deep dish; pour a little milk about them; cover and bake for twenty minutes. Then uncover and sprinkle with bread crumbs and bake ten mintutes longer. Serve hot. Onions may also be filled with the stuffing used for peppers (which see).

#### Tomatoes.

Tomatoes that are to be eaten raw should not be scalded, as this spoils the flavor. Wash thoroughly, and strip off the skins. If possible, set them on ice until ready to serve. Cut into slices and season with dressing made of vinegar, oil, salt, and pepper.

They may be served with lettuce, cucumbers, or any other salad, or used as a garnish for meats.

#### Stewed tomatoes.

To make a liter of sauce, peel and slice the tomatoes. Put on the fire and cook fast for twenty minutes. Season with a tablespoonful of flour stirred into a tablespoonful of butter, a teaspoonful of sugar, salt and pepper to taste, and two teaspoonsfuls of onion juice. Stew five minutes longer and serve. Bread crumbs may be used for thickening in place of the butter and flour.

#### Stuffed tomatoes.

Select large uniform tomatoes. Cut off the tops. Scoop out the inside, but do not peel. These tomato cups may be filled with salads—fish, potato, shrimp, rice, etc.—and served raw; or they may be filled with forcemeat and baked.

**Tamarind sauce.**

Shell a half liter of thoroughly ripe tamarinds; add one-fourth of a cupful of water and cook slowly until very tender. Rub through a sieve or basket and add enough sugar to take away the extreme acidity of the fruit. This makes an excellent relish to serve with meats, especially with ham, duck, and roast pork.

**Tamarind water.**

To make a cooling and refreshing drink, remove the shells from a generous handful of large ripe tamarinds. Add one cup of raisins and a cup of sugar; boil in four liters (a gallon) of water until reduced to three liters; strain and cool. Or, simply pour boiling water over shelled tamarinds; then cook, strain and sweeten.

**Salad made from heart of banana flowers.**

Choose a crisp heart and remove the outside bracts; cut it fine, sprinkle with salt, and squeeze out as much of the sap as possible. Wash with cold salted water and squeeze dry. Add a tablespoonful of vinegar, an inch of shredded ginger root, and salt. Cover with cold water and boil until tender; then drain. When cold, garnish with slices of raw onion and tomato and quartered hard-boiled eggs. Serve with French dressing.

**French dressing.**

Take a half teaspoonful of salt, one-fourth teaspoonful pepper, three tablespoonfuls of olive oil, and one tablespoonful of vinegar. Rub the salad bowl with a clove of garlic. Stir the salt and pepper into the oil, add the vinegar, and beat vigorously until the dressing thickens slightly.

**Katuray salad.**

Take four double handfuls of the white petals of the flowers, wash them, and cover with boiling water. Cook until tender; then drain. When cold, garnish with onion, tomato, and hard-boiled eggs. Serve with French dressing.

**Ubi, gabi.**

These may be cut into slices and cooked in salted water until tender, then served in white sauce.

Very tasty croquettes may be made by the following recipe: Two cupfuls of mashed ubi, one teaspoonful of onion juice, two eggs, and salt and pepper to taste. Beat the yolks of the eggs and mix with them the mashed ubi and a little milk. Add salt, pepper, and onion juice. Leave until cold. Shape into cylinders about ten centimeters long. Roll these in egg and then in fine bread crumbs. Fry in deep hot fat until brown.

**Patola.**

Pare the patola and wash in cold water. Put one tablespoonful of lard into a frying pan. When this is hot, fry one large onion



## INTERIOR OF SALA OF A DOMESTIC SCIENCE HOUSE.



## A CLASS IN GARMENT MAKING.

which has been chopped fine. When the onion is nearly cooked, add the patola. Cover and cook until soft. Add plenty of salt and pepper and serve hot.

#### Scalloped patola.

Peel and wash the patola and cut into slices. Boil in salted water until cooked. Drain. Add one tablespoonful of pork fat and salt and pepper to taste. Beat three eggs light and add a cup of milk and the patola. Turn into a greased pudding dish; sprinkle with bread crumbs and bits of butter; and bake.

Patola may also be boiled until tender and served in a thin white sauce.

#### Ambrosia.

Take one grated coconut, six juicy oranges, one pineapple, and two cups of white sugar. Pare the pineapple and pick it into small pieces with a fork; cover with sugar. Pare the oranges and cut them into small pieces; cover these also with sugar. Then mix the pineapple, oranges, and coconut together, and add the rest of the sugar. Serve as cold as possible.

#### Lemon jelly (made with guláman).

Take one grated coconut, three cups of water, two cups of sugar, one cup of guláman, and the juice of one lemon. Wash the guláman and cut it into inch lengths; put these into three cupfuls of boiling water and boil until they dissolve. Add one cup of sugar, strain, and add the lemon juice. Pour into a shallow pan to cool. The guláman should be about one inch deep in the pan. When this is hard, cut into cubes. Wash the grated coconut in two cupfuls of cold water. Rub and squeeze until all the taste is removed from the meat. Strain and sweeten with one cup of sugar. Pour this coconut milk over the lemon jelly.

#### To prepare coconut milk.

Grate the meat of a fresh coconut, place it in a strainer of wire or sinamay, and hold over a shallow dish. Moisten well with water and work through the strainer the liquid contained in the meat of the coconut. This liquid has many of the qualities of milk, being especially rich in fat. It may be used instead of milk in many preparations and is especially good for corn chowder, cream of chicken, and potato or onion soup.

#### Candied pineapple.

Peal and slice a good-sized pineapple. Put the fruit into a kettle with two glassfuls of sugar and one-half glass of water. Boil until the fruit is tender. Remove the fruit and spread on a dish to cool. Boil the sirup until thick. To test it, drop a little in cold water; it should make a soft ball. Return the fruit and stir for five minutes in the sirup; then spread the pineapple on platters to cool and harden.

**HYGIENE.**

(Talks based upon the following may be given, the main thoughts to be reproduced, used as blackboard reading lessons, and copied into notebooks under separate headings a little at a time. These lessons should be re-read from the notebooks several times during the course.)

Sickness is not punishment for sin, but is caused by careless living—by breaking the laws which govern health. Health depends first of all upon cleanliness. Dirt breeds disease and disease brings suffering and death. If we have clean air to breathe, clean food to eat, clean bodies, clean clothes, and plenty of sleep and exercise, we may be reasonably sure of having good health.

There are a few great laws of health which we must keep if we expect to be well and strong. These laws must be observed if we wish to enjoy living and get the best out of our lives. First of all, we must eat wholesome food; that is, food that makes good red blood. It is not enough to simply fill the stomach with anything which will satisfy hunger. Our food makes our blood, and our blood builds our bodies. All the strength of our bodies and much of the strength of our minds comes from the food we eat. One who has not plenty of wholesome food to eat has a weak, thin body and no power of resistance. He is often sick, and when no sicker than a better-nourished person, he will die, while the well-nourished person will recover. The poorly nourished body can not be strong; neither can the brain in such a body do its best work.

Vegetables, fruit, fish, eggs, milk, and meat are all wholesome foods. Eggs and milk are two of the most wholesome foods and are cheaper than meat; every pupil should make a habit of eating some of these every day.

Unwholesome food is food which does not make good red blood and which is likely to make one sick who eats it. Green fruits, wilted vegetables, fish which has been dead a long time without being cured in some way, lard from a sick hog, meat of animals that have been drowned or have died of sickness, half-cooked rice, very hard corn, and many other things commonly used as food, are not wholesome.

Coffee is not a food and does not nourish the body. Like water it is a good drink, but coffee alone is not a good breakfast for a person who is to study or work until noon.

Pupils ought to be made to realize that their first duty is to take care of their health. One of the ways of doing this is to eat three wholesome meals every day. It is too long to go without food from bedtime until noon the next day. This custom causes headache and indigestion and weakens the whole body.

Clean air is just as necessary to health as plenty of wholesome food. Breathing dirty air makes the lungs weak and causes tuberculosis. There are many things which are constantly poisoning the air; the result is plainly seen in the thin, sick, coughing people all about us.

Air that smells bad is not fit to breathe. If one is anxious to be well and have his family well, he must take care to dispose of everything that could possibly poison the air. This means that sheep, goats, pigs, and other animals must not be kept under the house; that sand must be put into the privy every day; that smoky lamps must not be allowed to remain burning in the sleeping rooms all night; and that constant care must be taken concerning many other things which a person may find who has trained eyes and a resolve to do his best to keep his family well and strong.

If well people are to keep their health, sick people must not spit in the streets or in the market place. This habit causes thousands of deaths every year; and yet very few people make any attempt to stop it. When young people realize this awful danger and do their part to make the people in their homes realize it, then, and not until then, will the habit be stopped.

Public opinion is the greatest force in the world for reform, and public opinion is simply what we and our people believe. No law can accomplish all of the good for which it is intended until the people feel the need of such a law.

Another cause of sickness in the home is the fly. There is danger from this source, no matter whether the dirty part of town be near at hand or a mile or so distant; for where there is filth there will always be flies. Flies go from place

to place on boats, horses, carabaos, and people, and are often carried for miles. They find their way to the food in the market, to clean homes, and to the tender skins of little babies. They carry on their bodies the filth in which they breed and so bring disease and death. Because of them many babies die every year. Flies spread cholera and many other dread diseases. The filth by the riverside may be just as harmful to your family as if it were under your own kitchen.

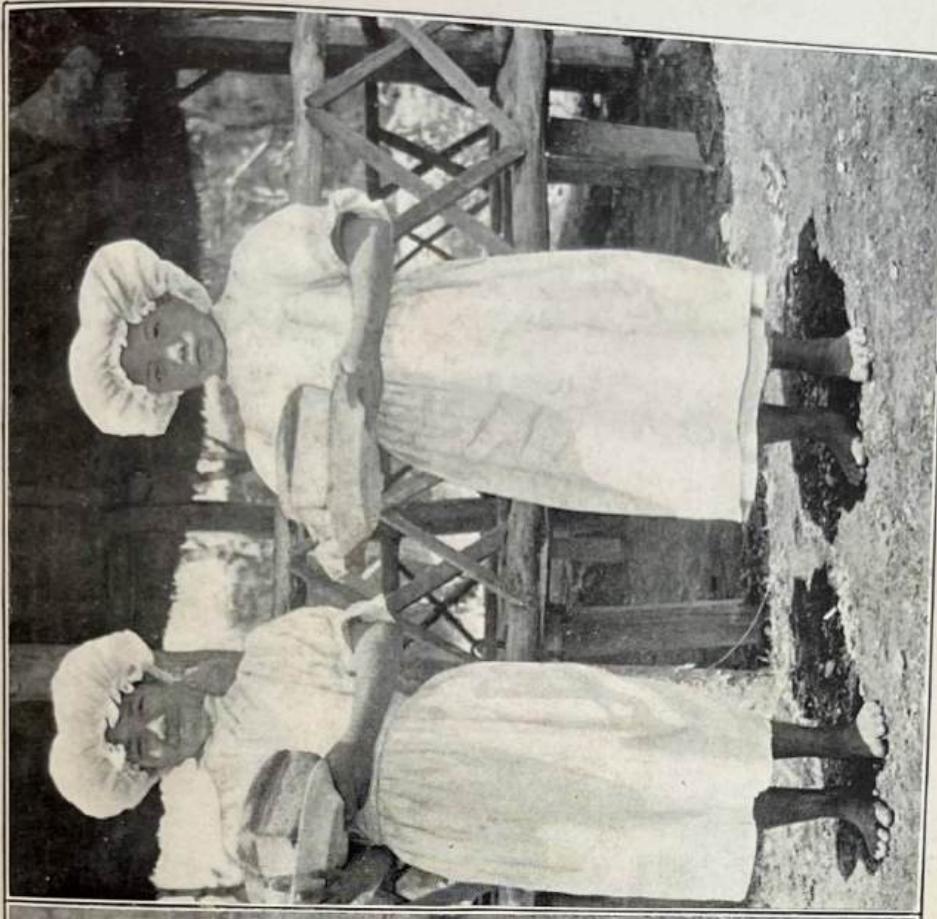
Another thing necessary to good health is plenty of refreshing sleep. Sometimes pupils abuse their health by studying until late at night and then lying down anywhere to sleep for a few hours. If one does not have plenty of sleep, he becomes weak and nervous; and if he continues without sleep for a long time, he will become sick and die.

While we sleep, nature renews the worn-out parts of our bodies. We must have eight hours of refreshing sleep each night if we are to put our best effort into studying or work of any kind. It is a bad thing to study all night before examinations; the brain will be tired the next day, and the student will not make so good a grade as if he had gone to sleep at a reasonable hour.

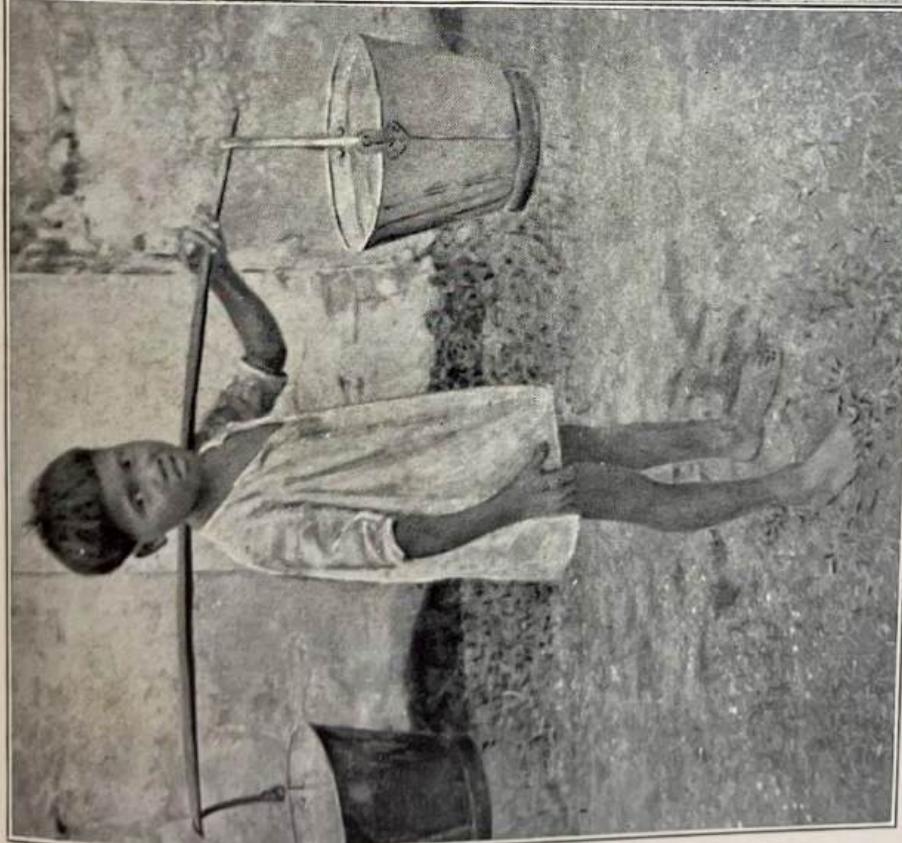
We should make it a duty to prepare the right conditions for sleep. We should have a comfortable pillow, blanket, and mat, and loose, clean sleeping clothes, and should never sleep in the clothes we wear during the day. If we are to awake refreshed and ready for the new day's work, we must have good beds in quiet, clean, airy places; we must have mosquito nets and clean, comfortable bed clothes.

Mosquito bites cause malaria; therefore mosquito nets are just as necessary as the clothes we wear in the street. If we hide our heads under the blanket, we must breathe over and over the same air, which is not good after it has once been breathed; it causes headache, weakens the lungs, and in time brings on tuberculosis. If one has to fight mosquitoes all night, he can not rest, is tired in the morning, and is not ready for work of any kind.

Exercise, too, is necessary for our well-being. Any part of the body that is not used soon becomes weakened and



IGOROT GIRLS AS BREAD-BAKING STUDENTS.  
PLATE VII.



TOO HEAVILY LOADED.

out of order. Muscles increase in size and strength according to the use made of them. For example, the boatman uses vigorously the muscles of his arms and chest day after day; so they are big and strong and he has much endurance. It would be impossible for a teacher to do the same work as the boatman, for his muscles have not been trained to it.

Exercise strengthens the whole body and makes all the organs more vigorous. When we exercise, the heart beats more vigorously and carries more blood to the tissues. Exercise causes the lungs to draw in more fresh air and to get rid of the impure air. The skin, the lungs, the kidneys, and the intestines have to do more work to get rid of the increased waste matter.

Walking is one of the best forms of exercise. A pupil who has a brisk walk to school every day will not suffer from want of exercise. Dancing, baseball, military drill, swimming, and horseback riding are all good exercises and also cultivate grace of person. Exercise, especially in the form of games, helps to make one think quickly and to be cool in time of danger.

We need some kind of bath every day, if we wish to keep well. The first object in using soap and water on the skin is to keep clean, and the second is to give vigor and strength to the whole body.

If a pupil lives properly day by day—that is, if he has plenty of wholesome food, pure air, exercise, and sleep, and takes a bath daily—he is almost certain to keep his health; but there are other things that demand attention.

One who studies at night must be careful of his eyes; it is very bad to study by a poor flickering lamp which makes the book now dark, now light. If one can afford a book, he can afford a good lamp; it is neither good sense nor economy to ruin one's eyes studying by a poor light, as many do. One should not study while lying down; this has caused weak eyes in the case of many people. Every pupil needs to provide himself with a good table, a comfortable chair, and a good light, just as much as with books and writing material.

Girls have the harmful custom of wearing little thin shoes to school in rainy weather. Shoes and stockings are a very necessary part of one's wearing apparel; they save one's feet from bruises and cuts and keep off insects and dirt and therefore disease. Shoes suitable for wet weather must be strong and thick enough to keep water out and keep the feet dry. There is no surer way of getting sick than to sit about in damp clothing. Do not stay in school all session with wet clothing on, but take the quickest way home and rub yourself vigorously with a towel until you feel warm. Then put on dry clothes and keep out of the wet.

Damp clothing, especially damp skirts and stockings, causes many kinds of sickness—rheumatism, colds, tuberculosis, etc.—among people who are careless and indifferent in matters of health or who let pride instead of good sense tell them how to dress.

Young people should bear all these things in mind; for an education is of little value if it is obtained at the cost of health and good eyes and results in a weak constitution and a thin nervous body racked with coughing.

#### ETHICS.

The aim should be to teach the common courtesies, such as using "Please excuse me," "Thank you," "You are welcome," "If you please," etc.; also showing respect to elders and kindness to the weak and unfortunate. Have talks on superstitions, on being afraid in the dark, and other subjects of a similar nature.

In the teaching of courtesy the teacher should try to realize how much depends upon her, for there are many pupils, who, if they are to have any good breeding at all, must get it in the schoolroom. In these lessons the most important thought for the teacher to keep in mind is that courtesy comes from the heart and is not governed by fixed rules. Bowing and smiling, offering a chair, acknowledging an introduction gracefully, and many other little acts are marks of politeness, although in themselves they are nothing. "Politeness is to do and say the kindest

things in the kindest way." The following may be taken as the basis of talks on this subject, the substance of these talks to be used for blackboard reading lessons and copied into the notebooks.

Any one who is always considerate of the feelings of others has good manners. The people of every country have their own peculiar customs, but there are certain acts that show good breeding the world over. Perhaps the first mark of good breeding is one's treatment of the old and infirm. Old people have peculiar ideas and are often very childish; but no one who is well-bred will show any disrespect to an old person, no matter how cranky he may be.

It is most unkind to stare at or comment upon the infirmity of any one, or call another's attention to it. People who are lame, ugly, cross-eyed, fat, or peculiar in any way, are sure to be oversensitive; and they do not like to have their peculiarities noticed.

Many who are afflicted with birthmarks of some sort are so sensitive that they do not care to go among people; and left by themselves, they live lonely, unhappy lives. We can make such people much happier by helping them to forget that they are not just like the rest of us.

Another mark of good breeding is respect for the rights and property of others. A teacher should not permit a girl to come to school day after day with lice in her hair, or dirty and evil smelling, as such a pupil is a nuisance to those about her. Such a child grows into a woman for whom people have no respect and who, worst of all, has no respect for herself; and that sort of person is a menace to society.

Children do thoughtless, selfish things which they should not be permitted to do, not only because of the discomfort resulting to others at the time, but because the repetition of such acts develops confirmed selfishness in after life.

No child should be permitted to borrow from her classmates. A girl who is continually borrowing her neighbor's eraser and begging thread and paper is a class nuisance. She does not command the respect of her schoolmates; and

unless corrected, she will be a neighborhood nuisance when she is a woman.

Another mark of good breeding is quiet behavior in all public places. Every one likes to see a girl happy and full of life, but she must not behave in such a manner as to attract the attention of strangers. She should cultivate a soft, gentle voice.

A well-bred person is always careful to have both clothes and body perfectly clean—not only the parts which people will see, but also the underclothes and all the body. Not every girl who is clean is well-bred; but a dirty, careless girl never is.

It is very ill-mannered for a person to tattle or repeat conversation that will cause ill feeling, or to ask questions about things that do not concern her, or to pry into the private affairs of others. One should not ask too many questions, such as: Where are you going? Where have you been? What have you in that package? How much did it cost? etc. If the person wants you to know, she will tell you without your questioning her.

It is no disgrace to carry a parcel in the street. It is absurd and small-minded for a young women to allow father or mother or little brother or sister to carry a parcel that belongs to her, but which she is too lazy or snobbish to carry herself.

The right of privacy is sacred and should always be respected, especially in the home. It is exceedingly rude to peep in through windows or to listen to conversation that is not addressed to you. There is a saying that listeners never hear any good of themselves, and such people are always despised and are called eavesdroppers. One should never enter a room without knocking, or go into any private room where not wanted. Trunks, boxes, baskets, or packages, whether locked or unlocked, and papers, notes, or letters of any kind, whether sealed or unsealed, that belong to another are sacred and should be left alone.

It is ill-mannered in the extreme to read a written paper without permission; and no one respects a person who

reads a note or letter given him to deliver. When looking over another's souvenir post cards one has no right to read what is written upon them unless the owner asks him to do so.

After eating anything that has a bad odor, the teeth and mouth should be carefully washed. Many people have bad breath, that could be sweetened by washing the mouth in water in which cinnamon (*canela*) has been boiled. Perfume does not remove a bad smell and often only makes it worse.

It is positively indecent to use a comb, toothbrush, or any toilet article belonging to another. Each person must have such things for her own individual use.

No well-bred person will make offensive noises with the mouth, nose, finger-joints, or any part of the body. Never yawn, clean the finger nails, pick the teeth, or scratch any part of the body in company.

The nose requires care. If necessary to make a noise in cleaning it, one should excuse herself and go out of sight and hearing. Nothing is more offensive and disgusting than a habit of snuffling. Use a handkerchief. When coughing, cover the mouth and turn the head aside.

Use, but do not abuse, face powder; it is a necessity in a hot climate. It makes one appear fresh, and adds much to one's comfort. It should be used sparingly, with the object of adding to one's personal comfort, not of making one appear white. Girls are much prettier without any powder at all than with so much that it stands like drops of milk upon their faces or gives them a ghastly, unnatural pallor.

These are only a few of the things which should be impressed upon the minds of the girls. Every day, little things will come up which must be spoken about and corrected. The daily example of the teacher is a powerful influence for good, and the girls are bound to pattern more or less after her.

## GRADE FIVE.

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The beginning of practical sewing.—Bleaching and dyeing cloth.—Salads, soups, stews, sauces, sandwiches, puddings, food for invalids.—Care of the sick and hygiene of the sick-room.—Care of and food for babies.—Care of the child after the period of babyhood.—Tuberculosis: How to avoid it; how to treat it; and what an afflicted person should do in order to avoid giving it to others.—The school as a place for forming good habits.—A few words on the ordinary etiquette of every-day life.—Mourning customs.

### SEWING AND TEXTILE WORK.

#### PRACTICAL GARMENT MAKING.

Make dolls' clothes, using such patterns as would be suitable for children five to eight years old. Let the girls cut paper patterns of the size to fit real children and take these patterns home. The purpose in making dolls' clothes this year is to give the girls the experience without expending the time and money that would be necessary in making the larger garments. Standard paper patterns should be secured; and the girls should be taught to use them in cutting out and making underwaists, underskirts, camisas, drawers, dresses, and trousers. The girls should cut duplicates of these standard patterns to take home. The making of sanitary bands should be taught; talks should be given on hygienic clothing; and material suitable for different seasons should be discussed and samples shown.

#### TEXTILE WORK.

##### GENERAL OBSERVATIONS.

Study the quality, price, width, and utility of different kinds of cotton cloth. Give talks on fast and fugitive colors. Tell how to set colors and explain the effect of

sunlight and soap on colored fabrics. Experiment with samples. If the color runs, salt may set it: use one tablespoonful to four liters of water. It may be necessary to use alum and water in the same proportions.

Ordinarily it will be sufficient to wash colored material in moderately warm suds, rinse it quickly, and hang it wrong side out in the shade to dry. Always use a fine grade of soap and never rub it upon the material.

Discuss materials suitable for school dresses; consider durability, suitability, and cost. For school use choose a material that will wash and wear well, because school clothes receive constant wear and must be kept clean by frequent washing. An odor of perspiration and a mussy appearance are not tolerated if one wishes to appear well dressed.

The girls' skirts must be short enough not to drag in the mud and dust of the street or sweep the schoolroom floor. The skirt should hang evenly, so that it is equally long in front and back and on the sides. One has so many books to carry and so many other important things to think about that she can not keep her skirt in mind all the time. If a long skirt does not receive constant care, it is a menace to health. The dust of the street is full of germs and frequently contains the bacillus of tuberculosis. Many people who are suffering with this disease are very careless about spitting in the street. For these reasons, we must keep our clothing as free as possible from dust. Moreover, a long skirt quickly becomes damp, thereby causing a cold; and cold following cold weakens one's system and brings on many diseases.

Discuss also the most suitable clothing for little children. Emphasize the fact that one little shirt is not enough clothing for a little child, except in the warmest hours of the day. Also explain the value of shoes and stockings.

Review the removal of stains as taught in Grade Four, doing individual work. A careful account of these lessons should be kept in the notebooks.

## BLEACHING.

Cotton cloth when carelessly washed and rinsed becomes grimy and yellow. Teach the girls to wash such cloth with plenty of soap, to boil it, and then to rinse and lay it on a clean grass plot and leave it in the air and sunshine, wetting it occasionally as the cloth dries, until it is white and clean.

## DYEING.

Use the patent analine dyes that are put up in small packages and sold everywhere. Directions for their use are given on the packages. The secret of success is to have the material perfectly clean and thoroughly wet before dipping it into the dye bath (this is not so easy as one may think) and to keep the goods in motion while dyeing, so as to prevent unevenness of color.

Wool and silk dyes may not be used for cotton and linen; nor vice versa. The original color always modifies that of the dye somewhat and it is best to experiment first with a small portion of the dye and cloth. Dark shades are usually more successfully produced than light ones.

There are many native dye-stuffs, and women may be found who will perform experiments before the class. Experience has shown that the prepared dye is quite as cheap as, and much more satisfactory to work with than, the natural roots and barks. However, it is well for the girls to know these native dyes; and a few lessons should be given on their uses.

## LESSONS ON CLOTHMAKING.

Take the class to some house where there is a loom in operation and watch the weaver at work. Call attention to the threads lying side by side, then to the thread that is run over and under the first ones from edge to edge and back again. Teach the girls that the first threads are called the warp and that they always run the length of a piece of goods. The thread that is woven into the warp is called the woof; it always runs across the goods and

forms the selvage. Let the girls examine the selvage and see how it is made and why it does not ravel. They will see that the edge of the goods is formed of small loops made by the woof thread as it is turned to be woven back.

The machine upon which the cloth is woven is called a loom; and the busy little instrument which carries the woof thread and weaves it into the warp is called the shuttle.

On returning to the school, review what the girls have learned. Have first an oral lesson; then write questions on the blackboard, the answers to which will bring out the story of the morning's work; as:

Q. What did we see this morning?

A. We saw Mrs. Gonzaga making cloth.

Q. How did she weave the cloth?

A. She laid threads side by side (the warp) and then ran another thread over and under the alternate warp threads from edge to edge and back again, etc.

When the account is put on paper the questions are not copied; in this way the answers make a complete well-worded story of the morning lesson.

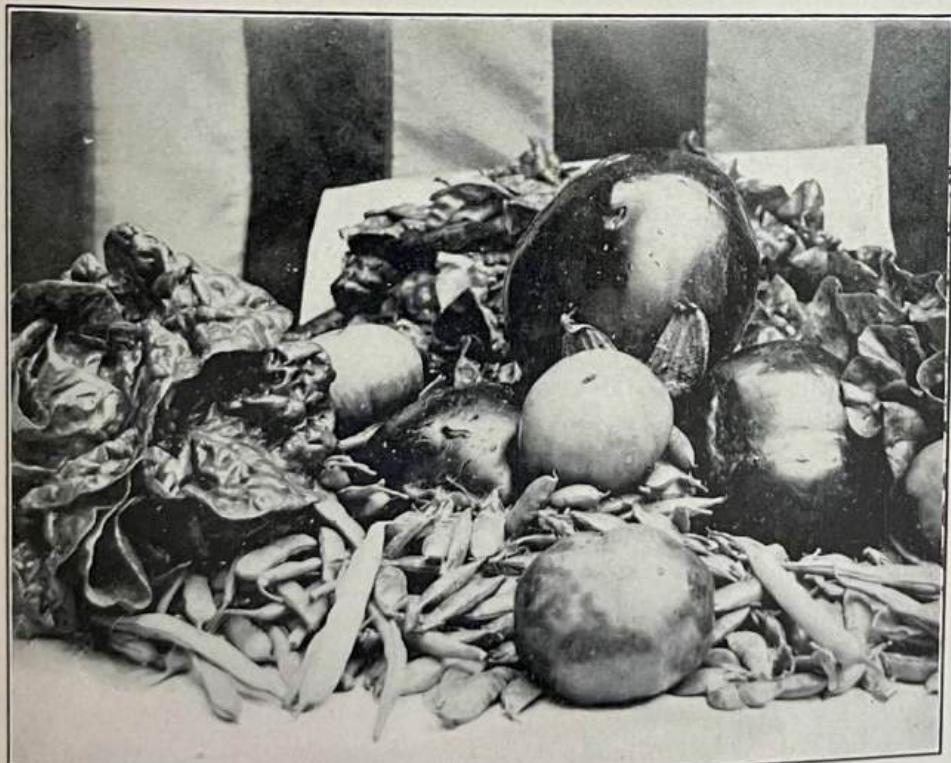
If possible, study the making of thread in much the same way. It is probable that some one may be willing to work a few minutes before the class in the schoolroom. It is a very common sight in northern Luzon to see men spinning as they walk in the streets. A whirling motion is given to the spindle on the thigh or any convenient part of the body. The spindle is then dropped, twisting the cotton which is wound on the upper part of the spindle. More cotton is drawn out, the spindle is given another twirl, the thread is wound upon the spindle, and so on.

#### COOKING AND HOUSEKEEPING.

Have practical work in every day housekeeping and marketing. Prepare vegetables in season. (See recipes under Grade Four.) Make salads, soups, broths, gravies, and simple puddings. Prepare food for the sick.



SOME PHILIPPINE VEGETABLES.



SOME AMERICAN VEGETABLES GROWN IN THE PHILIPPINES.

PLATE VIII.

## SALADS.

Salads are a very important food, because they are healthful and economical and may be prepared very attractively. They are particularly good in hot weather when one has little appetite, for they are cooling and the dressing served with them is of great food value. In time of cholera we must remember that no food is to be eaten that is not thoroughly cooked; serve then only such salads and garnishes as are safe to eat.

Lettuce and pechay may be used as a bed for any salad; and fresh radish tops, endive, paco, mint leaves, or mustard leaves may be used as garnishes. To prepare these leaves for use, cut them from the stem and separate them; then let them freshen for some time in the coldest water to be had. Wash them clean and be very careful that no insect clings to them; swing them in a basket to partially dry them and then finish drying them with a soft cloth. If the leaves are left wet, the dressing will run off them.

There are three kinds of salads: First, those served uncooked with oil, salt, and vinegar, and made of the wild or cultivated herbs such as paco, endive, mustard, pechay, lettuce, and various water plants; second, those made of uncooked fruits or vegetables, such as banana, pineapple, lukban, sincamas, cucumber, tomato, onion, and radish; and third, those made of cooked vegetables, meat, fish, eggs, etc.

When making salads of green herbs, the herbs must be as fresh and crisp as possible. They should be kept in cold water until needed. If the herbs are slightly withered, they will revive if the ends are clipped and the leaves are left for a while in slightly salted water. Salad of this kind should not be mixed with the dressing until it is needed; otherwise the leaves will wilt and the salad will be spoiled.

The flavor of salads made of cooked vegetables and meats is improved by letting them stand for some time in French dressing before serving. All salads should be served very cold.

When arranging a salad for serving, the dish should be lined with green and the salad placed thereon attractively and garnished as daintily and prettily as possible. Almost any fish, meat, fruit, or vegetable may be served as a salad.

#### Bamboo salad.

Select a young and tender bud and shred it; cover with cold water and bring to a boil; drain and cover again with cold water; boil until tender; drain again when cold. Add salt, pepper, vinegar, and oil, and let stand until well seasoned. Garnish with onion, tomato, and hard-boiled eggs.

Bamboo pickle is made by pouring hot spiced vinegar over boiled bamboo, prepared as described above.

#### Tomato jelly.

Stew enough ripe tomatoes to make a quart of tomato sauce. Season this with salt, pepper, onion juice, a little sugar, and two laurel leaves. While boiling, stir into this one cupful of gulaman which has been washed and cut into small lengths. When the gulaman is dissolved, strain into a mold. When firm, slice; then garnish with lettuce and pour over all a French dressing. This jelly lends itself agreeably to many combinations of salad, being susceptible of countless variations. If cut into small cubes, it makes a pretty garnish for cold meats.

#### Lettuce salad.

The lettuce should be washed carefully and served with French dressing. (See recipe for French dressing.)

#### Pechay salad.

The leaves of the pechay are very good as a substitute for lettuce with meat and vegetable salads.

#### Paco salad.

The new fronds of the paco should be scalded and when cold served with French dressing. They are sometimes served with a French dressing without scalding.

#### Cucumber salad.

Cut off both ends of the cucumber and pare; then cut into thick sections. Cut each section around and around to form ribbons, using a small sharp knife. (Throw away the center containing the hard seeds.) Leave in cold water half an hour, drain thoroughly, arrange in a bed of green, and pour French dressing over it.

#### Tomato and pineapple salad.

Remove the skins from the tomatoes and cut a thin slice from the top of each; take out the seeds and some of the pulp. Sprinkle the

inside with salt and let stand in a cool place thirty minutes. Fill the tomatoes with shredded pineapple and roasted peanuts broken into small pieces, using two parts of pineapple to one part of nuts. Mix with vinegar, oil, and salt; garnish with nuts and slices of tomatoes.

#### Pepper and pomelo salad.

Select the long sweet green peppers and cut them into halves lengthwise. Remove the seeds, and fill with pomelo pulp and peanut kernels broken into pieces. Allow five nut kernels to each pepper. Garnish with nuts and serve with vinegar, salt, and oil.

#### Tomato salad.

Remove the skins from the tomatoes, cut into slices, and serve with French dressing.

#### Salmon salad.

Arrange the salmon on crisp salad leaves of some sort, and garnish with rings cut from hard-boiled eggs and shredded onion. Serve with French dressing.

#### Tomato and corn salad.

Pour boiling water over large smooth tomatoes and remove the skins. Set away to cool. When cold, remove the centers of the tomatoes with a spoon and fill the cavity with cold boiled corn cut from the cob and mixed with salt and pepper; arrange the tomatoes on a platter lined with paco, pechay, or lettuce leaves.

#### Fish salad.

Line the bottom of the dish with crisp salad leaves. Fill the center of the dish with cold boiled fish cut into pieces. Pour over it a generous supply of vinegar, salt, pepper, oil, and shredded onion. Garnish with slices of onion and tomato and rings of hard-boiled eggs.

#### Chicken salad.

Cut cold boiled chicken into small neat pieces; with three cupfuls of this meat mix a cupful of cold boiled rice and a half cupful of minced onion. Sprinkle all with salt and pepper. Into three tablespoonfuls of oil stir a tablespoonful of vinegar. Pour this over the chicken mixture and toss until well mixed. Line the dish with crisp leaves, and fill with the chicken salad.

#### Potato salad.

Take three cupfuls of hot boiled potatoes cut into cubes, one half cup of olive oil, three teaspoonfuls of vinegar, one-fourth cup of onion chopped fine, and one teaspoonful of salt. Mix these ingredients thoroughly; heap the salad on a dish; and garnish with radishes, tomatoes, and sliced onions.

**Plain French dressing.**

One-half teaspoonful of salt, one-fourth teaspoonful of pepper, three tablespoonfuls of olive oil, and one tablespoonful of vinegar. Rub the salad bowl with a clove of garlic, put the oil into the bowl, and stir the dry seasoning into it. Add the vinegar and stir vigorously until the dressing thickens slightly. A larger quantity made in the same proportions may be served in a bowl. This dressing may be used with any green salad.

**SOUPS AND STEWS.**

These are very nourishing and economical foods and are particularly adapted to the wants of the children at the time the school lunch is served. A strong broth has only about five per cent of nutritious matter; and soup as ordinarily made is much weaker than this. However, when served without straining, the broth, meat, and vegetables, together with a piece of bread, make a substantial lunch.

To make soup a perfect food, the solid meat must be changed into a liquid form; and in order to do this the fiber must first be softened so that the juices and blood may be drawn out. As a low degree of heat changes the albumen in the meat (which is similar to the white of an egg) into a solid form, it is necessary to use cold soft water, because soft water makes its way into the tissues more readily than hard water, thereby softening the texture of the meat and allowing the juices to escape more easily. It is also necessary not to boil the soup, as the albumen on the surface of the meat would immediately coagulate and thereby prevent the juice from dissolving and being drawn out into the water. Salt hardens the water and should not be added until the soup is done.

Soup should be made in a porcelain-lined or granite iron soup kettle with a close cover, because the juices of the meat are acid and will act upon a metallic kettle, thereby giving the soup an unpleasant taste. A close cover is necessary in order to prevent evaporation and also to keep out the dust, ashes, and smoke.

A good school soup may be made with two kilos of beef marrow bones, one kilo of lean beef chopped, one large onion chopped, two carrots chopped, three garlics broken into cloves, and six potatoes. Cut the meat and vegetables into

small pieces, put them into a large pot, cover with cold water, and simmer for three hours. If barley or rice is used, it may be put into the pot at the same time as the meat and vegetables.

The bones should be cracked and put into a large pot with two or three laurel leaves and covered with cold water. Set this pot at the side of the range where it will not reach the boiling point in less than an hour; keep it closely covered and let it simmer. Strain this liquid into the soup and add the thickening—noodles, tapioca, or vermicelli. (See the following recipe for making noodles, etc.) Let it boil five minutes for the flour and water, or twenty if noodles, vermicelli, or tapioca are used. Add salt and pepper and set aside to cool.

#### **Thickening.**

To make noodles: Put a cupful of flour into a soup plate, and make a well in the center. Put into it the yolks of four eggs and one-half teaspoonful of salt. Mix the flour gradually into the yolks. Work until the dough is no longer sticky. Roll out into a very thin sheet; place in a towel and swing in the air, or place in the sunshine a minute to dry. Then roll tightly and cut into fine noodles; drop these into the boiling soup. Instead of noodles, sometimes use a variety of Chinese vermicelli to be obtained in the native market; at other times barley, rice, flour and water, or tapioca may be used for thickening.

#### **Caramel for coloring soups.**

Put two tablespoonfuls of sugar into a small tin cup and let it melt and then bubble over the fire; when it becomes a seething brown mass (not burnt), pour in two tablespoonfuls of boiling water and stir until the sugar is dissolved. Use enough of this to color clear soups, but not enough to make them sweet.

#### **Chicken soup.**

A tough old fowl makes a better soup than a tender young chicken. Cut up the bird, severing every joint. Put into a soup kettle, allowing a liter of water for every half kilo; add a sliced onion. Bring slowly to a boil and cook until the meat drops from the bones. Set aside to cool. Take out the bones, cut the meat into small neat pieces, and return it to the soup. Season with salt and pepper and when boiling add a half cupful of rice; cook until the rice is tender, or about twenty minutes. Thicken with a tablespoonful of flour mixed with a little cold water.

**Okra soup.**

Cut up a fowl, cover it with cold water, and cook slowly until tender. Brown one onion in a heaping tablespoonful of lard; add a quart of sliced okra and fry it well, stirring all the time to prevent its burning. Add two liters of hot chicken broth and let the mixture boil down to one liter. Add three ripe tomatoes pared and cut fine, season to taste with salt and pepper, and serve with a tablespoonful of boiled rice in each soup plate.

**Bean and tomato soup.**

Soak three cupfuls of dried beans over night in cold water; drain. Put one kilo of fresh pork into cold water and bring slowly to a boil; then add the soaked beans, a sliced onion, and two laurel leaves, and cook until the beans are tender and broken into pieces. Lift out the pork and pass through a sieve the beans, the onion, and the water in which they were boiled; return to the fire with a few fresh tomatoes pared and chopped fine. Cut the pork into small neat pieces and return to the soup; season to taste with salt and pepper and a little sugar; and thicken with a tablespoonful of flour stirred into a little cold water.

**Rice soup.**

Boil half a cupful of well-washed rice for twelve minutes. Drain off the water, pour over it one liter of chicken broth, cook until the rice is tender, put through a strainer, and return to the fire. Beat the yolks of two eggs, and add to them a cup of coconut milk; add this to the soup and stir for one minute. Do not allow it to boil. Add more seasoning and serve.

**Goat stew.**

Take two kilos of goat meat (the neck and breast of a young goat make a desirable piece for this stew). Add an onion cut into pieces, and enough cold water to cover the meat; cover closely and simmer for two hours. Then add to the meat six halved potatoes, a sliced carrot, and salt and pepper to taste. Re-cover and let it boil another half hour, adding a little more hot water if desired. Thicken with flour and water.

**Mongo soups.**

See recipes under Grade Four.

**SAUCES.**

Sauces are various liquid or semiliquid dishes which add flavor or moisture or attractiveness to our food, so that it tastes better or is made more digestible. For example: With rice, which is almost pure starch and which contains no fat, we should use either milk or some kind of sauce which contains fat.

**Brown sauce.**

One cupful of meat broth, one-fourth teaspoonful of salt, a little pepper, one teaspoonful of lemon juice, one teaspoonful of chopped onion, one tablespoonful of pork fat, and one tablespoonful of flour. Put the fat into the frying pan and add the onion; fry until light brown; add the flour and cook the mixture a few moments; then add the hot broth two tablespoonfuls at a time, stirring each time till smooth. Season and strain.

**Egg sauce.**

Heat in a saucepan two tablespoonfuls of fat fried out of pork. When it bubbles, put in all at once two tablespoonfuls of flour; stir until well cooked. Have ready heated a cupful of coconut milk; to this add gradually the flour and lard mixture and beat until smooth. Season with salt and pepper and beat the yolks of two raw eggs with the thickened milk. Then add to the mixture two hard-boiled eggs with the whites chopped very fine and the yolks passed through a sieve.

**Tomato sauce.**

Peel and slice a liter of tomatoes. Cook for twenty minutes and then strain. Season with a teaspoonful of onion juice, another of sugar, and a little salt and pepper. Return the mixture to the fire and when it boils, stir in a tablespoonful of lard cooked together with one of flour. Simmer two minutes and serve. Use with meat or fish.

**Mint sauce.**

Chop six sprays of mint very fine and add half a cupful of vinegar in which have been dissolved two tablespoonfuls of white sugar. Add a little pepper and salt and serve with cold meat.

**SANDWICHES.**

A sandwich consists of two thin slices of bread with some kind of filling between them. The filling may be meat, fish, eggs, cheese, nuts, jam, or whatever the taste may dictate. Sandwiches are often served at picnics and at lunches of all sorts. The proper way to eat a sandwich is to hold it in the hand and bite through the three layers. Do not take the top layer only.

**Cold meat sandwiches.**

Cut a thin slice of cold meat, sprinkle it lightly with salt and pepper, and place it between two thin slices of bread. Ham, beef, mutton, chicken, pork, goat, or any other kind of meat may be served in this way.

**Salad sandwiches.**

Chop fine some roast or boiled chicken, season to taste, and put between two slices of bread upon which have been placed crisp lettuce leaves dipped into salad dressing.

**Egg sandwiches.**

Mash the yolks of hard-boiled eggs and moisten with a little vinegar and olive oil. Work to a paste. Chop the whites of the eggs fine and mix them with the yolk paste. Spread the mixture on slices of bread.

**Salmon sandwiches.**

Remove the skin and bones from a can of salmon. Shred the salmon and add the crumbled yolks of six hard-boiled eggs. Season with onion juice, vinegar, and any good salad dressing. Spread on thin slices of bread.

**Sweet sandwiches.**

A great variety of sandwiches may be made by spreading various jams on thin slices of bread.

**Coconut sandwiches.**

Mix a cupful of grated coconut, one-fourth cupful of white sugar, a teaspoonful of lemon juice, and a tablespoonful of coconut milk. Spread this mixture between slices of bread.

**Chocolate sandwiches.**

Melt a small piece of butter in the saucepan, stir into it some native chocolate, and season with caramel sugar. When the chocolate is thoroughly melted, take it from the fire and let it cool. Moisten with milk and spread on bread.

**PUDDINGS.**

A pudding is a dish for dessert, usually a mixture, as of fruit, milk, etc., sweetened or flavored, with a farinaceous basis. Puddings now are commonly boiled or baked, but formerly they were always boiled in a bag. The best-known pudding in the Philippines is called by the Spanish name "*flan*."

**Custard pudding.**

Take three cups of milk, six eggs, one cup of sugar, two teaspoonfuls of vanilla, and a little salt. Beat the eggs and sugar together, and add the milk and vanilla. Pour into a greased pudding dish, and set it in the oven in a pan two-thirds full of water. Bake until firm, or about forty minutes (the oven must not be too hot). A cupful of grated coconut may be added to this custard. It may also be cooked over hot water like the native custard (*flan*).

### **Chocolate pudding.**

Into three cups of hot milk stir two cakes of native chocolate wet with cold water. When the chocolate dissolves, pour it into a pudding dish; add the yolks of six eggs well beaten and 6 tablespoonfuls of sugar. Bake about forty minutes. Beat the whites of the eggs stiff; then add six tablespoonfuls of sugar and one teaspoonful of vanilla. Spread this over the top of the pudding, and set it again in the oven until the frosting becomes a light brown. If preferred, this pudding may be cooked over boiling water like the native custard.

### **Rice pudding.**

One-half cup of well-washed rice, one-half cup of sugar, three cupfuls of coconut milk, a generous pinch of salt, one tablespoonful of yellow lemon rind grated fine. Put all into a pudding dish and bake in a moderate oven two hours, stirring frequently for the first hour. Cook until a light colored crust forms over the top. Spread with strawberry jam and eat with coconut milk.

### **Bread pudding.**

One and one-half cups of bread crumbs, one cup of finely chopped suet, one cup of sugar, three eggs, one-half cup of coconut milk, one tablespoonful of orange juice. Mix all thoroughly together and pour into six well-greased cups; boil thirty minutes. Turn out on a dish and serve with pudding sauce flavored with orange. (For pudding sauce, see following recipe.)

### **Pudding sauce.**

Take one teaspoonful of flour, 1 cup of sugar, and one tablespoonful of butter. Beat these together very well, and add one cupful of boiling water. Flavor to taste, using any of the following flavors: orange, lemon, or pineapple juice, vinegar, or nutmeg. This may be served with rice or bread pudding.

## **FOOD FOR THE SICK.**

When a person is sick, his recovery often depends as much upon the food he eats as upon the medicine he takes. A physician will tell what food to give, and one must never give a patient anything the physician has forbidden him to eat, no matter how much the patient may beg for it. When a person is sick, his alimentary canal is weakened so much that he is not able to digest food as he does when he is well. A sick person is fed only those things which are easy to change into blood, and a very sick person must often be kept on a milk diet for many days. Eggs and milk are the best food for sick people, and raw eggs are especially easy to digest.

**Raw egg.**

To serve raw egg, break the egg into a glass, season it with pepper, salt, and vinegar, and let the patient swallow it whole.

**Egg gruel.**

1 egg, one teaspoonful of sugar, one cupful of hot milk, and nutmeg to flavor. While the milk is heating, beat the yolk of the egg till light-colored, and the white till stiff. Stir into the yolk first the sugar and then the hot milk; add the beaten white, and flavor. Serve hot in a glass.

**Eggnog.**

This is made in the same way and with the same ingredients as egg gruel, except that cold milk is used and the usual flavoring is brandy.

**Corn meal gruel.**

One-sixth teaspoonful of salt, one and one-half cups of boiling water, one tablespoonful of cornmeal. Pour the meal into the boiling salted water; cook fifteen minutes, stirring constantly; then cook over boiling water for three hours. Serve with milk.

**Mongo gruel.** (See recipe under Grade Four work.)**Milk toast.**

Toast a slice of bread to a light golden brown. Cut off the crust. Heat half a cup of milk, salt it slightly, and pour while hot over the toast when it is ready to be served. Coconut milk may be used if it agrees with the patient.

**Cup custard.**

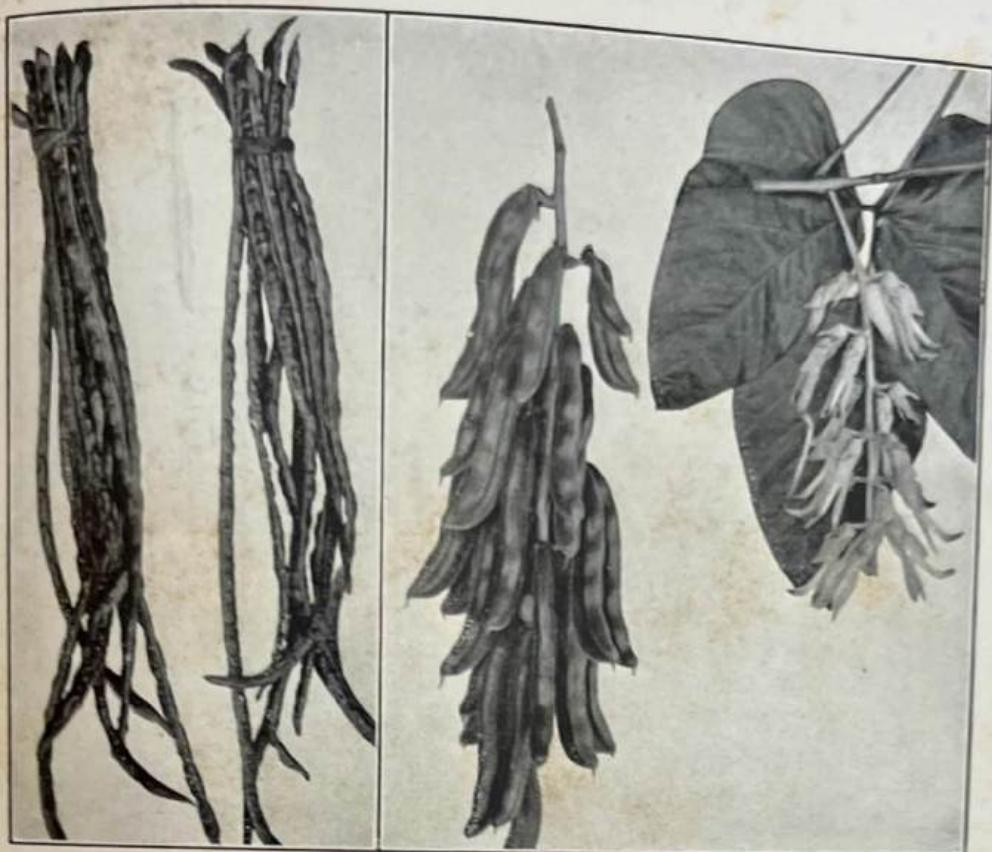
One-half cup of milk, one egg, one-half tablespoonful of sugar, a little salt, a little nutmeg. Mix the egg thoroughly, but do not beat it light. Add the sugar and salt, then stir in the hot milk, strain into a cup, grate the nutmeg over the top, and steam until firm over water that is gently boiling. Serve very cold.

**Chicken broth.**

Cut up a small fowl. Cover with cold water and let it simmer, adding sufficient hot water from time to time to keep it just covered. After the meat has fallen from the bones, take it out and strain off the liquor; let the latter become perfectly cold, and remove all the fat. Season with salt and pepper and return to the fire. If the broth is very strong, add a little boiling water. Put into it a teaspoonful of rice or sago and let it just simmer till it is tender.

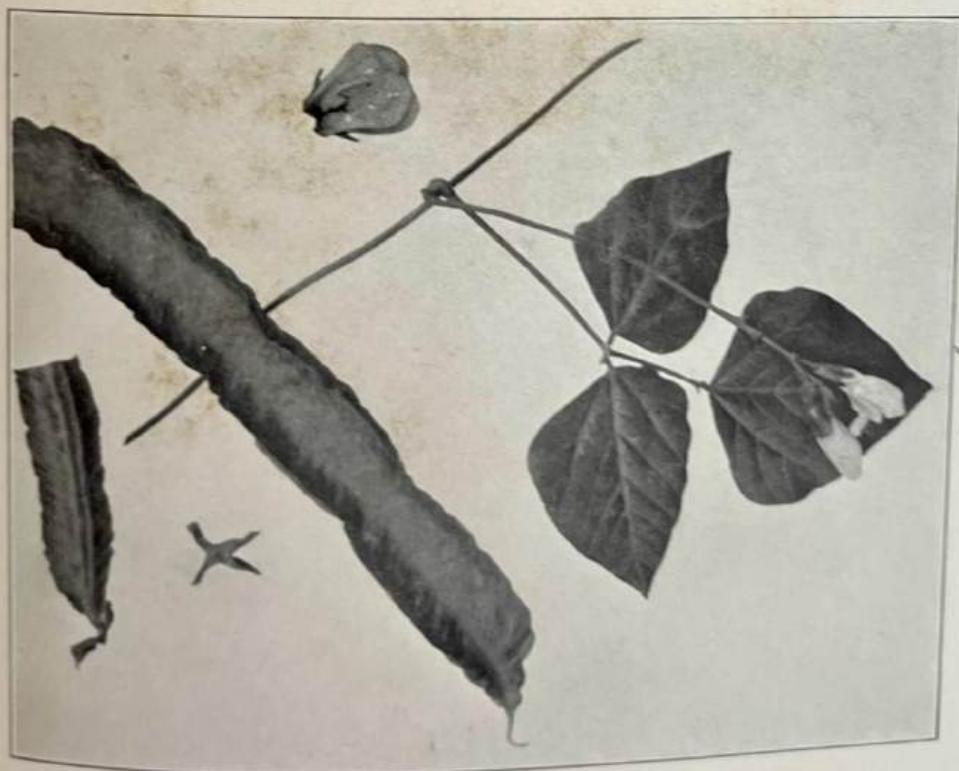
Or after straining off the liquor, add one-half as much milk as broth and serve very hot with a cracker or *pan de caña*. Coconut milk may be used.

When a good-sized fowl is used, remove the breast before cooking, and serve that as a second meal deliciously broiled. When only part



Sitao.

Velvet beans.



Calamismis.

PLATE IX.—THREE SPECIES OF BEANS.

of the broth is used, set the rest with gulaman and make a little mold of jellied chicken by using part of the white meat cooked with it.

#### Beef tea.

This is made by putting chopped raw beef into a covered glass jar set into cold water; bring the water to a boil and cook till the meat is white. The juice should then be strained and seasoned.

#### Scraped beef.

When solid meat is not easily digested, scraped beef is a good food. Get a piece of round steak as large as the hand and, holding it down firmly by one corner, scrape off the pulp from the fiber with a spoon. Turn it over and scrape the other side. The red pulp should be seasoned with salt, made into a little cake, and placed for a moment in a heated dry frying-pan over a hot fire. Turn only once. Serve this with mashed potato.

#### Blancmange.

Stir one-third cupful of gulaman into a little boiling water; add a bit of cinnamon bark and boil until the gulaman dissolves; then add a cup of hot milk and strain. Sweeten and pour into a mold. Serve with jelly or strawberry jam and milk or coconut milk.

#### Sago jelly.

Soak over night two tablespoonfuls of sago in half a cup of cold water. In the morning add a cupful of boiling water and a little salt, and stir thoroughly. Put into a double boiler and cook gently for two hours. Flavor with lemon juice and serve very cold with milk and sugar.

#### PRACTICE IN PREPARING FOOD FOR INVALIDS.

Have the girls prepare a tray in the class with food for a sick person. If a teacher or some member of the class is ill, choose that time for giving one of these lessons, as it will be much more vital if the food is actually prepared for some sick person. Put upon the tray no more food than the patient is likely to eat. No food that has once been taken to the sick-room should be served a second time, nor should food that has been returned from the sick room be eaten by any one else.

When arranging the food, use a tray large enough for the dishes it is to hold. A handy tray may be made of a clean board of convenient size with pieces of split bamboo nailed to the four sides. Cover the tray with a faultlessly clean napkin; use the prettiest dishes available; and lay

a bright flower beside the food, unless the patient dislikes flowers. If the person is too weak to sit up to eat, set the tray upon a pillow. This will hold it steady and high enough to bring the food easily within his reach.

When one eats in bed, crumbs are very likely to gather and attract flies and ants and are very uncomfortable to lie upon. When the patient has finished eating, brush the bed carefully and be sure to take away all bits of food.

#### HYGIENE.

##### CARE OF THE SICK AND OF THE SICK ROOM.

(For talks and notebook work, as suggested in connection with various subjects discussed under Grade Four.)

The sick room should be the coolest and most pleasant room in the house and should be as far as possible from the smells and smoke of the kitchen and the noise of the living room. It should be kept free as possible from dust and should have plenty of fresh air and sunlight. It is necessary to shade the room somewhat, of course, but all the sunlight consistent with comfort should be admitted, and the windows must be open day and night. It is very harmful to hang blankets around the bed so that the patient is in the dark and gets but little air.

People need air and sunlight as much as plants do. Care must be taken, however, that no draft strikes the patient. Sunlight, fresh air, and bathing are always of more help to the sick than medicine and cost nothing but care and a little thought.

Do not allow a lamp with its flame turned down to burn in the sick room through the night. A close room with a lamp burning all night will make even a well person sick. If a lamp must be used, put it in the next room. Candles make a better night light than a lamp because they do not smoke so much. Unless a light is absolutely necessary, always sleep in the dark.

Care must be taken to protect a sick person from any noise which is likely to disturb him, such as the screaming of playing children, the barking and howling of dogs, or the squawking of geese.

It is not well for a sick person to receive many visitors. It shows a kindly spirit to inquire about one's friends when they are ill; but unless one can be of service to the sick person or to his family, he should limit his visits to a very few minutes and should never remain long enough to tire the patient or make extra work.

Never whisper in the sick room or talk discouragingly to the patient; this will fret even a well person and has a harmful effect upon a sufferer whose nerves are oversensitive. Always be patient with an invalid, even though he may be unreasonable.

Keep the sick room clean and tidy. Remove at once all excreta and offensive matter; never allow such things to remain even for a short time in the sick room.

In the case of many diseases, especially tuberculosis, use pieces of old cloth instead of handkerchiefs, and have little pieces of cloth for the sick person to spit upon. These should be burned as soon as they are used. Do not permit the patient to spit upon the floor. If a cuspidor is used, put into it a weak solution of carbolic acid or a little dry lime. Failure to take proper precautions in this matter always spreads disease.

Change the clothing of the sick person and of the bed frequently. Wash the soiled clothes in hot water. The bed clothing, pillow-cases, blankets, etc., must always be perfectly dry before they are used again. With dolls, the teacher should illustrate how to change the bedclothes and the patient's clothing.

Do not discourage the patient by spreading out a great lot of medicine, spoons, glasses, etc., on the table; keep all such things in another room, except those absolutely necessary. Some simple thing like a bouquet of flowers, an orange, or a picture, brings much more pleasant thoughts to the sick.

If a person is really ill, a good physician should be called at once, as there is hardly any disease which he can not cure if called in time. When a physician is employed, carry out his orders very carefully. Choose your physician thoughtfully; then do not change unless you have

some good and sufficient reason. The common custom of going to two or three physicians for medicine at the same time, and not following carefully the orders given by any one, is very foolish. Make a note of the physician's directions on a piece of paper and also make notes for him telling exactly what you have done, such as the exact time of giving medicine, the amount and kind of food given, the hours the patient has slept, etc. This should always be done when the patient is very sick, for all such information is a valuable help. Whoever has the care of the sick person and fails to observe these common rules is responsible for the condition of the patient, if he should grow worse.

There are many little things which give much comfort to an invalid and require only a little thought on the part of the nurse. For example, frequently the handkerchief can not be found without a tiring hunt; tie a string to it and fasten the string to the pillow. To lie in bed all day is very hot and uncomfortable; rubbing the face, hands, and feet with a cloth wet in cold water and alcohol is very cooling and refreshing. This is especially good in cases of fever. It is difficult for a sick person to make some one in another room hear him; he should have a stick at hand with which to pound as a signal.

#### CARE OF AND FOOD FOR BABIES.

(For talks and notebook work.)

It is a pitiful fact that the number of Filipinos who die in early childhood is much greater than the number that grow up to mature years; this is largely due to the fact that those who have the care of little babies do not understand their needs. When the girls realize that babies do not die because God wants them to, but because they do not have proper care; and when women set themselves to find out the proper way to care for babies, they will do more for their country than could possibly be done in any other way.

As long as children are babies, and until they have cut their teeth, they must have a great deal of intelligent care;

otherwise they will surely be sickly, and if they do not die, they will grow up into weaklings incapable of either mental or physical development. A baby has very few needs, but those few are not to be trifled with, if he is to be well and to grow into a strong man. He must eat regularly the right kind of food; he must sleep; and he must be kept clean and warm.

The most important fact to be impressed upon every girl's mind concerning the care of little children is that the only things that should be fed to a baby during the first eight months of his life are milk, boiled water, and a little fruit juice and that the baby, in order to be healthy, must have each one of these in its proper proportion.

Mother's milk of course is best; but if the baby can not have that, he may be given canned milk, which should be properly prepared. On the wrapper of the can will be found printed directions for preparing milk for babies.

Goat's milk is good, but usually is hard to get; caraballa milk, if clean and properly diluted, does very well. If one has to buy fresh milk of any kind, he must be sure that it is pure. Milk is often diluted with water or coconut milk. In the majority of cases the water has not been boiled or distilled and is likely to make the baby sick, while to some babies coconut milk is so much rank poison. It often causes stomach and bowel trouble and may cause death. If one is not sure that the fresh milk he buys is pure and clean, he would do much better by feeding the baby on canned milk. It is well to have a physician tell how to dilute any milk that is to be used for baby food. It is not wise to experiment, because the baby may become very sick or die before one guesses right.

In order to kill the germs it contains, milk must be heated, but it must not be boiled; for boiling changes the nature of milk and makes it hard to digest. A good apparatus for heating milk consists of a large covered kettle, into which is fitted a tin rack with round holes cut into it for holding the milk bottles in place. This apparatus may be bought in any average hardware store. Put cold water into the kettle and set in the tin rack with the

bottles in it. There must not be water enough in the kettle to touch the bottles. Put it over the fire and let the water boil twenty minutes. The steam surrounding the bottles heats the milk. The mouth of each bottle should be stopped with clean white cotton cloth that has been boiled before being placed in the bottle. When a bottle is taken from the fire it should be put into cold water to cool quickly and the clean cloth should be left in its mouth until the milk is to be used. This keeps out flies and dirt and anything that would make trouble.

The kind of feeding bottles babies have makes a great difference in their health. The equipment for the school should contain two kinds of feeding bottles—one with long tube and soft nipple and the other without a tube and with the firm top fitted on the neck of the bottle. Let the girls try to find out which is the better and why. If they can not tell, teach them to see that a feeding bottle should have a round bottom and a firm rubber tip fitted to its neck; for if bottles with flat bottoms are used, milk is likely to be left standing in them. Not only will this invariably become sour, but flat-bottomed bottles are difficult to clean properly. The nipples should be made so that they will not collapse. The hole should be large enough so that when the bottle is held upside down, the milk will drop rapidly but not run in a stream. A tube should never be used; it can not be kept clean, and the sour milk that collects in it is poison to a baby.

Babies must be fed regularly. It is just as important that they eat at the right time as that they eat the right kind and amount of food. A baby that is fed every time it cries and whose stomach is full day and night is the one that dies of stomach trouble. Babies' stomachs must rest part of the time.

A very young baby should be fed once in two hours during the day and once or twice at night; but as he grows older, not so often. Babies under eight months of age must never be given rice, soup, sugar, bread, bones, or other things to suck to keep them quiet. Little babies

must not be given playthings to put into their mouths. These things all cause indigestion in various forms; and they may give the baby colic, fever, or cholera infantum and make him wakeful and fretful. No exception is made of "pacifiers" and teething rings in this connection.

Another great cause of sickness and death of little children is the custom of tending babies every minute. They are carried and petted and bounced around all the time they are awake, and are never left to themselves just to digest their food and grow.

Babies should not be given into the care of little children. This custom has cost many lives and has made many invalids, cripples, and hunchbacks. A child six or seven years old is not strong enough to carry about a big active baby. She may fall with him or drop him; or the baby may jump and sprain his back in such a way as to cause a life-long weakness. The little caretaker might not be to blame for the accident; but she would have a sorrow to carry with her all through life, if any harm happened to her charge. It is unjust to place such responsibility upon a child. Children should play with other children, of course, but should not be permitted to run about with little ones in their arms.

Kissing the baby is not at all good for him. Many grown persons have diseases of one kind or another, or foul breath and dirty lips from tobacco or betel nut. A baby does not like to be kissed. Kissing him immediately after he has fed is very likely to cause him to vomit; and vomiting tires him, takes his strength, and wastes the food that should be used to make him big and strong.

Many women seem to think it is part of a baby's necessary care to kiss and cuddle him; and men have a notion that a baby should be hoisted high above their heads or tickled and trotted to make him laugh. The baby will usually laugh or cry, not because he is happy or afraid, but just because he is nervous. A thoughtful mother knows that this can do her baby no good; that it often hurts him; and that it tires him needlessly, even if it does nothing worse.

It is a mistaken idea that little babies must be in somebody's arms all day long. They are cooler and more comfortable and much better off if, when not receiving necessary care, they are laid on their beds and left just to sleep and grow. Of course, a baby that is accustomed to a great deal of attention will fret for it; but that does not prove that it is the best kind of care for him.

Babies need fresh air quite as much as good food and quiet sleep; they should be kept much of the time out of doors. A very good plan is to hang the hammock in the shade where the wind does not blow too hard. At night the windows should be left open in the room where the baby sleeps.

One often sees a baby sleeping in a cloth hung from the ceiling. Sometimes this cloth is hung from both ends like a hammock, and a piece of bamboo is put into it to hold it open. Then if a bit of mosquito net is thrown over it to keep off mosquitoes and flies, it is a very good bed for the baby. A baby's bed ought always to be protected by a mosquito net; mosquitoes cause malaria, and flies cause sores and many kinds of sickness. Flies go into the very dirtiest things they can find and may come from filth directly to the baby; and he can not drive them away, even when they are walking on his mouth and eyes.

Sometimes this cloth hammock is hung from one nail like a bag. Then the baby is cramped and uncomfortable, for he can not lie straight; then too the bag closes over his head so that he does not get enough fresh air. This custom will cause him to have weak lungs when he grows up.

A baby must be kept clean. A dirty skin causes sickness of various kinds, especially fevers and sores. He must be washed every day—at first on his mother's or nurse's lap. He should be carefully protected from all wind by a soft blanket, and each part of his body should be gently bathed with a soft white cloth and quickly dried by patting with a second soft dry cloth. When the baby is about two months old he may be put into a bowl of warm water, but his bath

must be given quickly and he must be instantly wiped perfectly dry when taken from the water.

A baby's skin is very tender; therefore only the purest soap should be used for his bath. After being dried, a baby should have the creases of his body lightly dusted with a good baby powder (Mennen's or Colgate's by preference). This keeps him from getting sore and chafed.

Many times the top of a baby's head becomes crusted. This crust must not be scraped off or scrubbed off with strong soap and water; it may be cleaned away by bathing the head often with warm coconut oil.

A baby who has grown accustomed to being in the open and who sleeps soundly and digests his food properly is little likely to be sick. His body is full of good red blood, and if he does become sick, he is much more likely to recover quickly than a baby who has always been carried about and pampered. The proper everyday care of a baby often makes the difference between a mild case of fever and a very bad one.

If the baby is born well and sound and is properly fed, he will not need medicine. What he needs is pure food and fresh air; he also needs to be left alone and allowed to grow.

If he seems ill, call a physician—not a mere quack, but a reputable physician—and do not permit anybody else to give him any medicine. The first thing to do in case of fever or intestinal trouble is to lay the child down, keep him quiet, and not give him much to eat. This is the only thing to do until the physician comes.

Home doctoring can not be too strongly condemned. It often causes death and in nine cases out of ten it does more harm than good. Even if it does no other harm, it always delays the proper treatment so that the child is sicker when the physician does come, and the right medicine may be given too late to cure him. There are some people who, before calling a physician, try all kinds of charms and all the home remedies that anybody tells them about. Often when the physician comes, the sick person is so near to death that nothing can be done for him.

*Schedule for feeding healthy infants during the first year.*

(Hutchinson.)

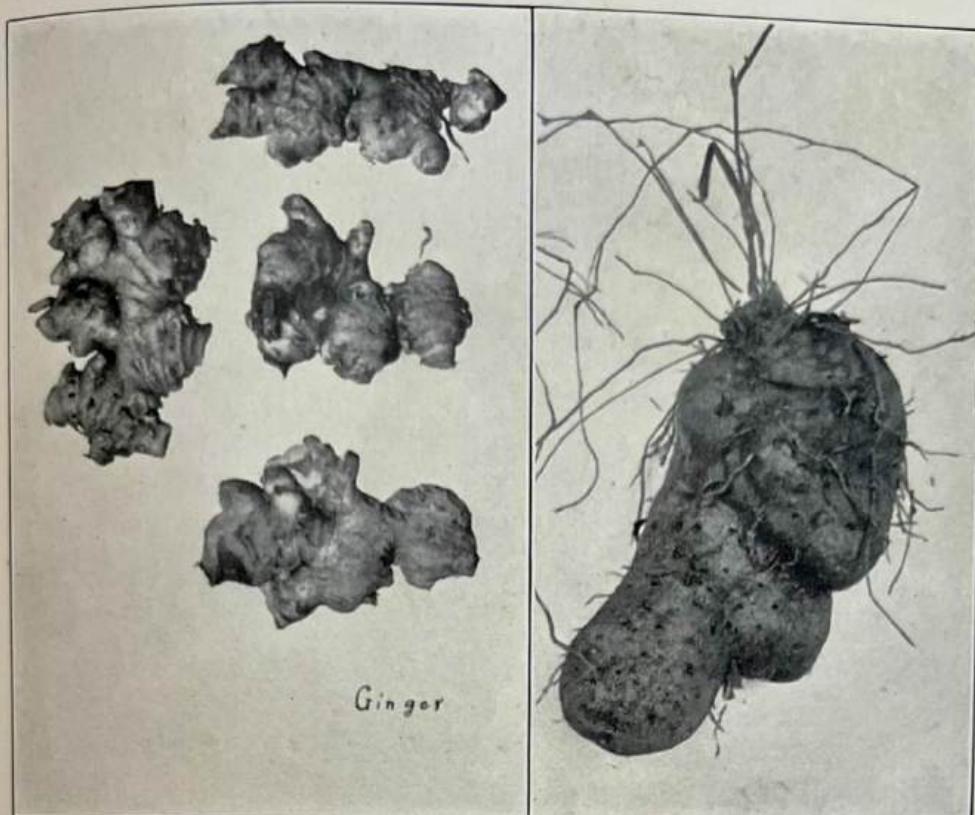
Age.	Number of feedings in 24 hours.	Intervals between meals by day.	Night feedings 10 p. m. to 7 a. m.	Quantity for one feeding.		Quantity for 24 hours.	
				Hours.	Ounces.	Grams.	Ounces.
Third to seventh day -----	10	2	2	1-1½	30- 45	10-15	310- 460
Second and third weeks-----	10	2	2	1½-3	45- 90	15-30	460- 930
Fourth and fifth weeks-----	9	2	1	2½-3½	75-110	22-32	680- 990
Sixth week to third month-----	8	2½	1	3-4½	90-140	24-36	740-1,110
Third to fifth month-----	7	3	0	4-5½	125-170	28-38	870-1,080
Fifth to ninth month-----	6	3	0	5½-7	170-220	33-42	1,020-1,300
Ninth to twelfth month -----	5	3½	0	7½-9	235-280	37-45	1,150-1,400

## CARE OF LITTLE CHILDREN.

A little child two or three years old should receive as much care as a baby. When he is old enough to run about a little and play with other children, he must be taught to be clean and to care for his own body. He must also begin to learn all those things which, if practiced day by day, make a strong body and a good mind.

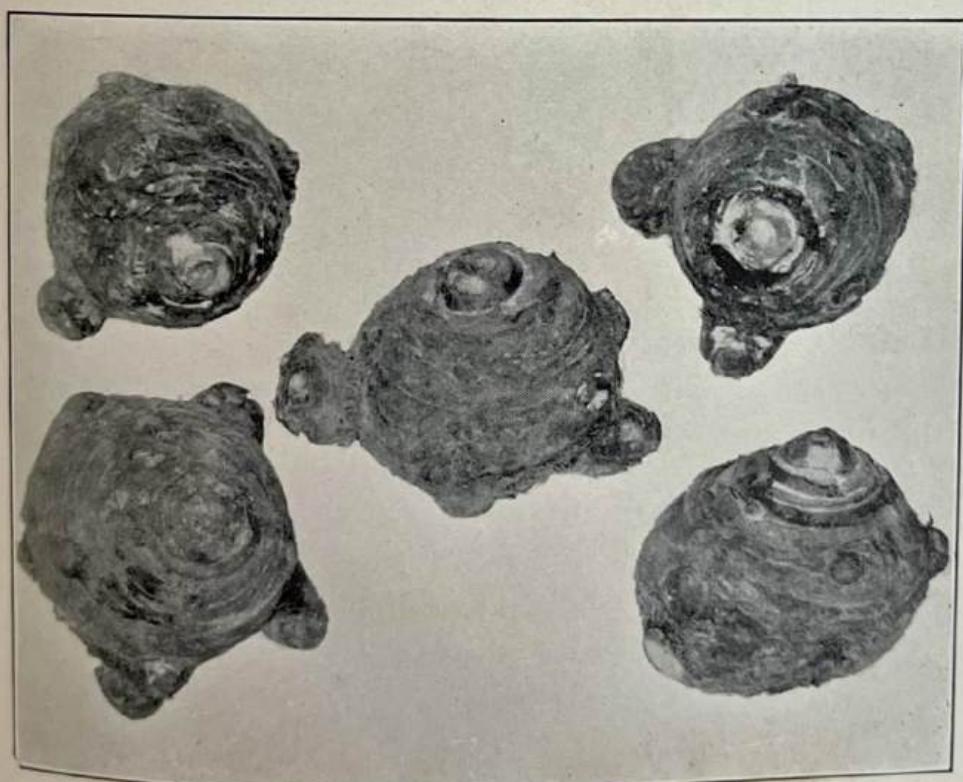
A mother needs much wisdom and patience and an unlimited amount of common sense. She not only has the life of her little children in her keeping but also the future health of the men and women that her children will grow to be. Everybody should know the laws of hygiene; but it is especially necessary for those who have the care of little children to know what causes sickness and how to avoid it. Every woman should realize that children can not have good health without plenty of pure milk and clean, easily digested food; that dirt causes sickness and death; that mosquito nets are as necessary as clothing; that mosquitoes cause malaria and flies bring sores and sickness of various sorts; and that sickness will surely come to dark, bad-smelling homes and to people who sleep crowded together in one room with the windows closed.

The needs of the little child are much like those of every-



Ginger.

Ubi.



Gabi.

PLATE X.—SOME EDIBLE ROOTSTOCKS.

body else—wholesome food; pure air; a clean body; clean, comfortable clothes; and plenty of sleep and exercise. Since he is not old enough to take care of himself, some one must see that he has all these things, if his body is to grow strong and his mind to be sound.

One of the child's most important needs is a daily bath; and sick or well, he must have it, for a dirty skin causes many diseases. Care must be taken not to let the wind blow across him when he is wet, or he will take cold. It is the wind blowing across a person while he is wet, not the water, that does him harm, especially when he is sick.

Bathing is a cure for many diseases, and there is no form of sickness that a dirty skin does not make worse. Very often lack of proper bathing is the cause of fever and sores on the body. A sick child should be laid upon a blanket in a room with the windows and doors closed and should be washed with a cloth or a sponge. The water used should be about as warm as the inside of one's mouth. The body should not be wet all over at once; first wash the face and dry it, then the arms and dry them, then the neck and chest, and so on, washing a little of the body and drying it at once. A sick child may be given a bath in this way; and instead of being the worse for it, he will be much more comfortable.

A bath must not be given immediately after the child has eaten. A good way to give the daily bath is to stand him in a pan of water and gently throw water over him. He should be dried quickly by rubbing his body briskly with a towel. If he is not feeling very well, he may be given a sponge bath; that is, his body may be wiped with a wet cloth and dried quickly by rubbing briskly with a towel. In addition to the usual daily bath, every little child needs a bath with soap and warm water at least once a week. The best time to give such a bath is just before putting him to bed.

The bones of little children are soft; and if a child is urged to walk too soon, the bones of his legs will bend and he will always have ugly, crooked legs. Children should

not be lifted by their arms; this may cause serious trouble. The custom of carrying children on the hip is bad for the child and bad for the one who carries him. The child's body becomes deformed, because this is an unnatural and a strained position; and as the bones are soft, the legs and hips develop unnatural shapes.

Little children should be dressed in simple soft clothes that will wash many times and wear well. The fact that a mother loves her child is no reason why she should make him uncomfortable with a stiff awkward hat upon his head, or hard shoes that hurt his tender feet, or a stiff dress that scratches his delicate skin. The most comfortable dress for little children is the most suitable. Children are not play-things and should not be dressed to amuse older people. One thin little gauzy shirt is not enough except in the few warmest hours of the day. Young children especially need to have the abdomen protected.

A child's teeth must be kept clean; they should be thoroughly brushed night and morning. Many people think that since the first teeth will soon drop out, they are of little importance; on the contrary, their care is of the greatest importance to the health and comfort of the child. Care of the teeth prevents toothache, sore mouth, fever, and various stomach disorders.

The child's nose must receive attention many times through the day and must be cleaned out thoroughly night and morning, not only so that he may breathe through his nose—a thing which is of itself very important—but also that he may get rid of the mucus which catches disease germs. Every child should be taught the use of the handkerchief and be made to carry his own and use it properly. If a child breathes through his mouth instead of his nose, something is wrong and a surgeon should make an examination at once. This is very important, for unless a child breathes properly he can not have strong lungs and is more likely to develop tuberculosis. It may even mean that he has in his head some unnatural growth which, unless attended to at once, will make great trouble.

If a child has weak eyes he must be taken to the best

available doctor for treatment. Many people are blind whose eyes might have been saved if they had been properly cared for in childhood.

Nobody should be allowed to work charms over a sick child or tie strings about his neck, wrists, and ankles to keep off disease. Girls must be taught that children need very little medicine and that no medicine at all is better than the wrong kind. This knowledge would save many lives and would be a great comfort to people living where there is no reliable physician.

Children usually become sick because their food does not agree with them. If a child has diarrhea, it is because his food has not digested properly. In most cases he does not need medicine and yet if he is not cared for wisely the diarrhea will be likely to develop into something serious. In such a case give him nothing to eat but milk for a few days and keep him quiet. Children often cry very much with colic. Their hands and feet are cold and their bowels are hard. Put the hands and feet into hot water and put a hot cloth on the abdomen.

If the little one is fretful and cries in the night and can not sleep, make a practice of giving him a warm bath before putting him to bed, and be sure he has clean, loose sleeping clothes. If he wakes in the night and can not go to sleep again, unless it is mosquitoes or other insects or cold that is troubling him, give him a sponge bath and he will probably go to sleep.

If children have the right kind of food, a daily bath, and plenty of refreshing sleep, they are not often sick. Few children get as much sleep as they need. Until they are six months old, babies should sleep sixteen hours out of the twenty-four; and until they are three years old, they need about fourteen hours sleep. Older children, as long as they are growing, need eleven hours. One of the important things which help to make strong men and women is plenty of sleep during childhood. Children should be put to bed every night at a regular hour. It is very bad for them to be taken to dances and fiestas where they are kept awake late into the night.

To have plenty of sleep, children must have beds in quiet, clean, airy places. They must not be put to sleep on the floor in the room where the cooking is done, especially if slops are thrown through the bamboo floor or if the air is smoky and the floor dirty. Neither can the child get the right kind of sleep in a room where there are pigs, chickens, or dogs; or where people are talking, laughing, or smoking; or in a room where a lamp is burning. Every child must sleep under a mosquito net. If he puts his bed-covers over his head to protect himself from mosquitoes, he breathes over and over again the air from his body, making his lungs weak and laying the foundation for tuberculosis. Moreover, if he has to fight mosquitoes all night, he will become nervous and irritable. A good clean bed in a quiet, clean, airy place is an absolute necessity for the growing child, if he is to become a big, strong, healthy man.

The custom of eating a hearty meal and going directly to bed is not good for children. They should have their heartiest food in the middle of the day; and at night they should eat something light, like bread and milk, or rice and milk—anything that will not keep them from going directly to sleep. Children can not digest certain things while they are young; therefore physicians have made a careful study of food for children. This is a very important matter, for all the strength of the body and much of the strength of the mind comes from the food. The hours for meals should be regular and the child should not be permitted to eat between meals. It is the child with the overloaded stomach and the child who eats at any hour whenever he is hungry, who has the weak stomach and who suffers from indigestion, diarrhea, cholera infantum, and other common bowel diseases from which so many little children die. Doctors agree that until the child is eight months old he must live on pure milk, boiled water, and a little fruit juice. A little child, although he may be eating other things, should always have all the milk he wants to drink. Most babies when they are eight months old may be taught to eat from a cup or a spoon.

The following plans show the sort of food which should be

given a child from the time he is a year old until he is able to eat as grown people do. This list does not include all that a little child may eat; it is only a sample menu for one day.

**Food from 12 to 18 months.**

First meal, 6 to 7 a. m. or earlier.

Cup of warm milk.

Second meal, 10 a. m.

A little soft-boiled egg with bread, and a little orange juice.

Third meal, 1 to 2 p. m.

Toast soaked with chicken soup.

Fourth meal, 5 to 6 p. m.

Cup of sago gruel with milk.

Fifth meal.

If necessary, late in the evening a cup of milk.

**Food from 18 months to 2 years.**

First meal, 7 a. m.

Bread and milk, rice and milk, or rice and butter, etc.

Second meal, 10 a. m.

Bread and butter and orange juice. Beef or chicken soup with rice or sago, etc.

Third meal, 2 p. m.

Mashed potato with gravy, and a little meat cut fine.

Milk toast, sago pudding, custard, or banana, etc.

Fourth meal, 5 to 6 p. m.

Bread and milk or yolk of egg beaten into cup of sweetened milk.

Fifth meal.

Cup of milk at night if the baby is hungry.

Many children, when they are as old as this, do well on only three meals a day.

**Food for third year.**

First meal, 7 to 8 a. m.

Soft-boiled egg with toast and milk.

Second meal, 11 a. m.

Bread and milk, or chicken, beef, or clam broth with *pan de caña*.

Third meal, 2 p. m.

Meat of chicken, mutton, or beef cut very fine, camote, squash, etc., and orange or banana.

Fourth meal.

Corn meal mush and milk, or rice and milk.

The way food is prepared makes a great deal of difference in its digestibility. Some people think that all eggs are

wholesome food; and it is a common sight to see a baby not big enough to walk eating a hard-boiled egg. This is one of the things which a baby positively should not have.

A little child should never be given pork, fried meat, fried fish, or fried foods of any kind; or sardines or hard-boiled eggs; or warm bread, cucumbers, green corn, or coffee; or green fruits, guavas, or nancas. Children should be taught to eat slowly and chew their food carefully.

When the child eats with the family, if he is not well managed, he will cry for things which are not good for him; but if he is never allowed to choose for himself and is not given a taste of the foods which are not good for him, he will be glad to eat whatever is given him, if he is hungry.

#### COLDS.

All colds are serious, for a cold is often the beginning of tuberculosis. Although a slight cold may not occasion any serious inconvenience, it should be cared for at once. Even a slight cold makes the body less resistant to communicable diseases and it may become a serious matter, if added to.

The means by which a cold is usually brought on is through some disturbance of the circulation—most frequently by chilling the surface of the body. While one is exercising there is but little danger of taking cold. It is dangerous to remain quiet if the clothing is wet, because wet clothing conducts the heat away from the body much more rapidly than dry clothing. This is especially true in regard to shoes and stockings. The feet must be kept dry and warm. The custom that many girls have of wearing little dancing slippers to school in the rainy season can not be too much condemned. If the feet are bare they may be wiped dry and rubbed until they are warm, so that no ill effects are felt from a wetting. Sitting in wet skirts and stockings is a sure way to take cold. Shoes and stockings are a necessary part of one's clothing, but the shoes to be worn in wet weather must be thick and strong—such as will keep the water out and the feet warm.

When a pupil gets wet she should take the shortest way home, take off all her wet clothing, rub the body with a

rough towel until she feels warm, and then put on dry clothing and stay out of the rain.

When a cold is felt coming on, much may be done to lessen its effect. Hot baths and mustard foot baths are good and the taking of hot drinks, such as hot lemonade or hot ginger tea, throws the blood to the skin and breaks up the cold; but after the cold has once gained foothold in the body, not much can be done except to protect the body from further chilling. A cough should never be allowed to continue; if it holds on for more than a very few days, a physician should be consulted without delay.

Nearly all sore throats are contagious and those who have them or have to do with them should govern themselves accordingly. Do not visit those who are suffering from diseases of the respiratory organs unless you can be of service.

Dust-laden wind such as we often face is dangerous and will frequently cause a cold in the head. The mucus membrane lining the nasal passages is a highly organized structure. It has many blood vessels and many foldings so that the air that is breathed may be properly moistened before entering the lungs. This delicate membrane of the throat and nose becomes irritated by dust and makes a field susceptible to the great number of germs which are caught on the moist, warm surface and thrive there. Avoid dusty places. Breathe through the nose. Keep the mouth closed. The nose is provided with a straining apparatus that is very efficient. Keep the nostrils clean so that they may do their work.

Little children should have particular care in the rainy season. They need more clothing than the ordinary one-piece garment which is their customary attire. If they get wet, their clothing should be changed at once. Their noses, too, should receive especial care during the rainy season.

We must remember that cold following cold undermines the health and weakens the whole system. If a serious cold is taken, do not neglect it; stay at home, preferably in bed. Eat only such food as is easily digested. The advice of a good physician at the outset may save time, money, and life.

## TUBERCULOSIS.

*Causes and treatment.*—Tuberculosis, or as it is also called, consumption or phthisis, is a contagious lung disease. It is not caused simply by colds, although a cold makes one more apt to take the disease. It is caused by very minute germs which usually enter the body with the air breathed. The matter which consumptives cough up or spit contains these germs in great numbers; frequently millions are discharged in a single day. This matter spit upon the floor, wall, or elsewhere, dries and becomes powdered; it then floats in the air as dust. The dust contains the germs, and they enter the body with the air breathed. This dust is especially likely to be dangerous within doors. The breath of a consumptive, except when he is coughing or sneezing, does not contain the germs and will not produce the disease. A well person takes the disease from a consumptive only by in some way taking in the matter coughed up by the diseased person.

Consumption may often be cured if it is recognized early and if proper means be taken for its treatment; in a majority of cases it is not necessarily a fatal disease. There is no danger in living with a consumptive if the matter coughed up by him is properly disposed of. This matter should not be spit upon the floor, wall, or sidewalk, but always, if possible, into a cup kept for that purpose. The cup should contain a carbolic-acid solution (six-teaspoonfuls in a half liter of water) or a little dry lime such as is used with the betel nut. This will kill the germs. The cup should be emptied into the vault twice a day and should then be carefully washed with boiling water.

Paper cups made somewhat like envelopes are better than ordinary cups, as they and their contents may be destroyed by burning. Patients too weak to use a cup should use moist rags which should at once be burned. A consumptive should never swallow his expectorations.

When coughing or sneezing, small particles of spit containing germs are thrown out of the mouth; therefore, consumptives should always hold a handkerchief before the mouth during these acts. Great care should be taken by

consumptives to prevent their hands, face, or clothing from being soiled with the matter coughed up. If they do become thus soiled, they should at once be washed with soap and hot water. When consumptives are away from home, the matter coughed up should be received upon bits of old cloth, which should be burned at the earliest possible opportunity. If handkerchiefs are used, they should be boiled by themselves in water for at least half an hour before being washed. If the matter coughed up is made harmless by disinfectants, a consumptive may frequently not only do his usual work without giving the disease to others, but he may even improve his own condition and increase his chances of getting well.

A consumptive should have his own bed, and if possible his own room; and the window should be kept open day and night. The patient's soiled wash clothes and bedclothes should be handled as little as possible when dry, and should be placed in water until ready for washing; they should be washed in hot water and boiled twenty minutes.

Rooms should be cleaned daily; but in order to prevent the dust from flying, the floors must be cleaned with damp cloths. Rooms that have been occupied by a consumptive should be thoroughly cleaned, scrubbed, whitewashed, or painted before they are again occupied.

*Tuberculosis is caused chiefly by spitting.*

*How to avoid tuberculosis.*—Keep as well as possible; for the healthier your body is, the more difficult will it be for the germ of tuberculosis to grow therein. To keep healthy, observe the following rules:

Don't live, study, or sleep in rooms where there is no fresh air. Fresh air and sunlight kill disease germs; therefore have as much of both in your house as possible.

Don't breathe dusty air. Keep your rooms clean, and get rid of all dust by cleaning with damp cloths; never sweep with a dry broom.

Keep the windows open in your bedroom at night.

Don't eat with soiled hands; wash them first.

Don't put your fingers or pencils into your mouth.

Don't keep soiled handkerchiefs in your pockets.

Take a warm bath with soap at least once a week.

Don't neglect a cough or cold, but go to a physician at once.

*How to get well if you have tuberculosis.*—A person who has tuberculosis is not dangerous to those with whom he lives and works, if he is careful and clean. If you or any of your family have the disease, you must obey the following rules, if you wish to get well:

Go to a good physician at once. If you wait, it may be too late. If you go in time, you can be cured.

Don't drink any form of intoxicating liquor.

Don't sleep in the same bed with any one else, and preferably not in the same room.

Keep out in the fresh air and in the sunlight as much as possible. Good fresh air and rest are the best cures.

Keep your windows open day and night.

Eat plenty of nourishing food every day, especially eggs and milk.

*Don't give tuberculosis to others.*—Many grown people and children have tuberculosis without knowing it and may give it to others. Therefore every person, even if healthy, should observe the following rules:

Don't spit upon the sidewalks or playgrounds or upon the floors or hallways of your home or school. It spreads disease and is both indecent and dangerous. When you must spit, spit into the gutter or into a spittoon half filled with water.

Don't cough or sneeze without holding a handkerchief before your mouth and nose.

Don't blow the nose with the fingers.

#### ETHICS.

#### FORMING GOOD HABITS AT SCHOOL.

(For talks and notebook work.)

A great many things are to be learned in school besides what is printed in the textbooks. It is during school days that we form most of the habits which make our lifelong customs.

Habits are formed by doing the same things over and over again. Every right act helps to develop the custom of

choosing the right. Every act of obedience helps to develop a law-abiding citizen. Every time a pupil exercises self-control when things go wrong and, instead of using angry words and throwing things about, conducts herself as a lady should, she strengthens her power of self-command; and it is the power of self-command that makes it possible for one to command others and so become a leader. If a girl does her very best each day, she establishes the habit of right living and makes the right the natural choice of the woman she will become when left to herself at the end of her school days.

School life helps to establish a great many good habits, such as self-control, right thinking, consistent reasoning, truth-telling, politeness, punctuality, cheerfulness, self-respect, neatness, order, a sure sense of honor, the habit of overcoming obstacles, and many other good traits—all of which go to make up noble manhood and womanhood.

A teacher works hard to prevent tardiness, because tardiness leads young people to form careless, slovenly habits; it cultivates lawlessness, in that the pupil disregards the regulations governing the school; it promotes selfishness, since by disturbing the whole class she interferes with the rights of others; it creates disorder; and it permits of disrespect to those in authority. In addition to all this, there is much valuable time wasted.

Why shouldn't a girl copy in examination if she wants to, since she is cheating nobody but herself? When she copies she is lying—saying that a certain knowledge is her own, when it is not; she is stealing—taking a grade that does not belong to her; and cheating—securing an advantage by employing dishonest means. All such habits lead to the pupil's dishonor. Besides the harm which she is doing herself, she is putting her teacher into a false position; for a pupil who knows that she deserves a better grade than the one who cheated, and who does not know that this girl did cheat, will accuse the teacher of showing favoritism.

Let us consider some of the other points of schoolroom etiquette. In school life, as well as everywhere else, good manners are based upon a respect for the rights and privileges of others. If one takes the trouble to think, she will

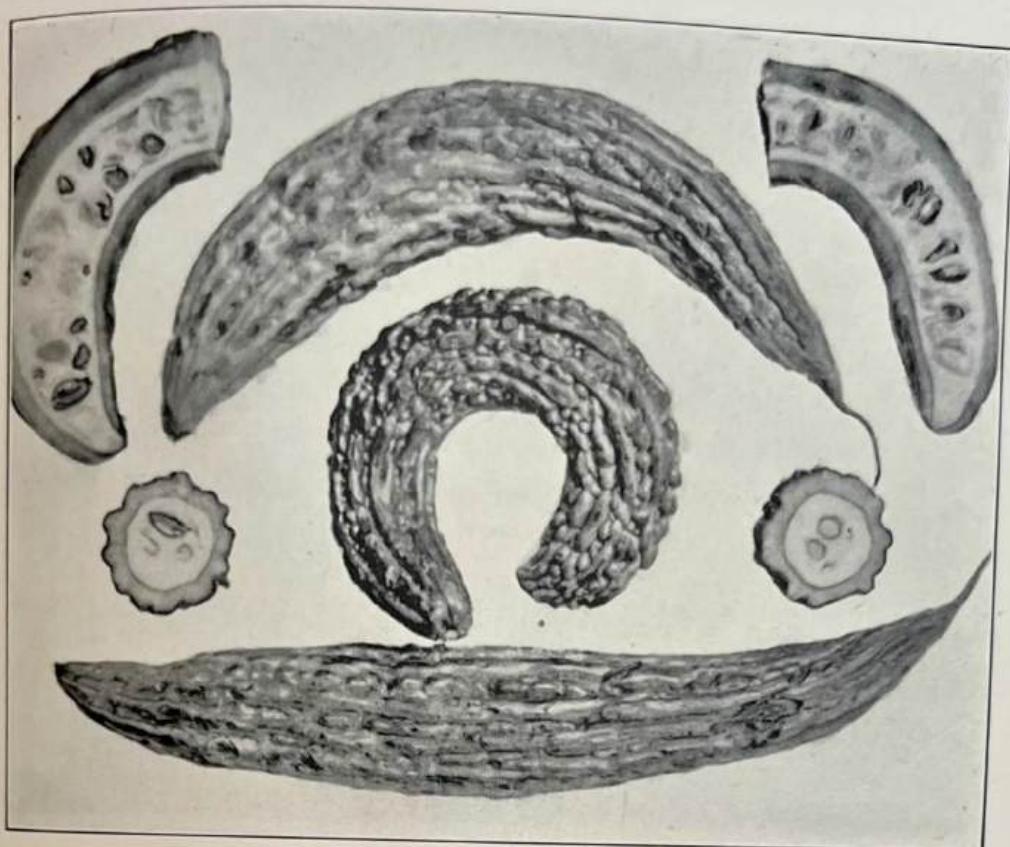
realize why it is impolite to laugh and whisper and play in school. It takes the minds of the pupils from the subject they should be considering, and it requires the attention of the teacher, so that she can not put her whole thought into the subject she is explaining; therefore it wastes time—not only time belonging to the one causing the disturbance, but also that of everyone in the room. No one but a thoughtless person is guilty of such selfishness.

A girl who is sulky, saucy, or disrespectful is cultivating habits that lead to much unhappiness.

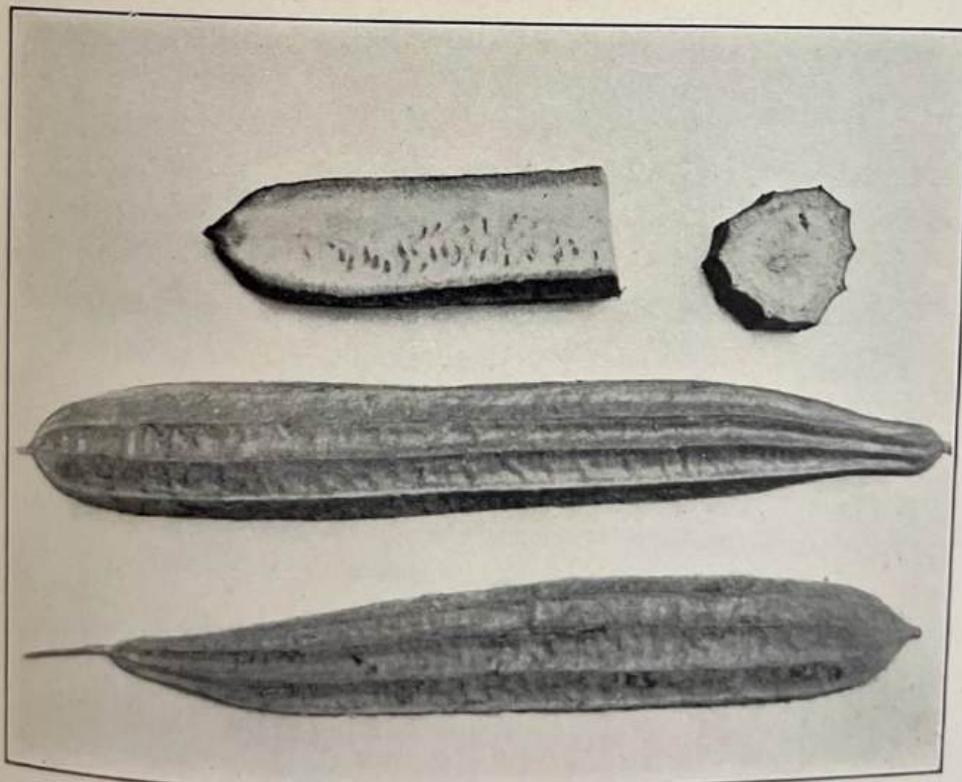
One must not forget to be grateful to her parents for the privilege of going to school, especially when money is scarce and the parents are obliged to make sacrifices in order to find the necessary amount. Some girls who have a little more book learning than their relatives are proud and disrespectful and even look down upon their people. They should remember that good solid common sense and life experience count for a great deal in the school of life to which they have not yet even been admitted. They should remember, too, that if they have ability and opportunities, it means that they must do more for others, especially for those who made it possible for them to get their education. An education, to be a blessing, must be used to help others to nobler and better ways of living.

School days should be happy days, and all pupils should try to make school life pleasant. They should be loyal to each other and to the school and should try to make their school the very best. Boys and girls must always be frank and courteous and must not forget to be dignified in their relations with each other. They should be particularly courteous to new pupils, and should treat them as guests until they are familiar with the ways of the school.

Girls must remember that giggling is silly and crying is babyish; and they should try at home as well as at school to be womanly and ladylike. It is always rude to laugh at the mistakes and blunders of others anywhere; but if we permit ourselves to do this over and over again in school, we shall form the habit of being rude and thoughtless of other people's feelings. This will cost us many good friends during life.



AMPALAYA OR AMARGOSO.



PATOLA.

PLATE XI.

Extend to your schoolmates the little everyday courtesies. Don't forget to say "good morning," "good-by," "thank you," "excuse me," etc. Don't be ashamed to ask pardon, if you have offended and are truly sorry. Don't become angry with a schoolmate and refuse to speak to her. If she has habits that you do not like, you need not be intimate with her; but treat all your companions courteously. Do not speak unkindly of anyone; if you can not say something good, don't say anything.

Don't come to school too early or linger about the school grounds after school is dismissed. Accidents happen and things disappear; and suspicion always falls upon a person who is on the grounds when she has no real business there.

Take good care of your books; don't mark them or get them dirty, or close them over pencils, handkerchiefs, pads of paper, or anything else that will break their bindings. Every educated boy and girl should have a few books of his own; one will never have the right feeling toward books until he owns some and is familiar with them so that the characters in the books become his personal friends.

Don't mark on or deface the building, fence, or school furniture. A person who sharpens the graphite in his pencil on the desk shows very plainly that he does not appreciate good furniture or know how to care for it properly. Pupils who are guilty of writing on fences and houses are a disgrace to their class, and the members of the class who know better should reason with them and insist upon their correcting their manners. They must learn to treat all public property with the respect due to it.

#### SOME FORMAL ETIQUETTE.

If you wish to introduce two young men, you may simply mention their names; as "Mr. Agana, Mr. Mendiola." That is quite enough, but if you wish to be more formal, you may say: "Mr. Agana, allow me to introduce to you Mr. Mendiola." If you wish to introduce two sisters, the older one should be called, for example, Miss Perez, and the younger one, Miss Isabel Perez.

Generally men are introduced to women, and boys to girls; but every one, whether a man or a woman, is introduced to

a person in a high position, such as the Governor-General of the Philippine Islands. A girl should be introduced to an older woman, a boy to an older man, and a pupil to a teacher; for example, in presenting Mr. Guzman to Mrs. Lopez, it is Mrs. Lopez's name that is first mentioned: "Mrs. Lopez, Mr. Guzman;" or "Mrs. Lopez, this is Mr. Guzman."

One must be very careful to pronounce the names very distinctly when introducing people. If the name is not understood, one may very properly ask to have it repeated. You may say: "I beg your pardon, but I did not understand the name."

When two women are introduced, a bow and a smile from each is quite enough. It is not necessary for them to shake hands or to rise if they are seated. When two men are introduced they usually shake hands. A woman does not rise when a man is introduced to her, unless he is old or a very distinguished person to whom she wishes to show particular respect. A married woman may shake hands if she chooses, but it is not customary for a young girl to do so.

Until they have been introduced, it is not correct for a gentleman to ask a lady to dance with him. A gentleman must bow to a lady when asking for a dance or when claiming her for a dance, and both lady and gentleman must bow and say "Thank you" when the dance is over. A lady must not refuse the invitation of one gentleman and then accept that of another for the same dance.

When a school dance or a public dance of any kind is given, it is necessary to have a teacher or some older lady present as chaperon, and her name should appear in the invitations. It is best to have three married ladies who are well known in the society of the town to act as matrons for these public dances. Their names should appear on the invitations and they should all remain until the dance breaks up and should be responsible for the dignity of the occasion. They should see that the guests enjoy themselves and that everything goes smoothly and pleasantly. School dances should begin by nine o'clock and close promptly at midnight. Young girls should not attend without a chaperon. It is the height of impoliteness for a few selfish persons to try

to monopolize the good dancers; each should try to make the occasion enjoyable for all.

A lady must not forget to bow and thank any one who shows her a courtesy. She must not talk to or accept favors from strangers, especially men. A woman should be as cool and brave as a man in time of danger. To scream or shriek or behave selfishly in time of danger is unpardonable.

It is more than wrong for a young woman to receive visits or letters from a married man. She must have more self-respect than to allow him any liberties, no matter how slight.

A hostess stands to receive her visitors, but she does not go to meet them unless she wishes to show that she considers the visit a great honor. When a man and a woman approach a hostess together, she should shake hands with the woman first.

When a crowd of young men are standing together in a public place and a young woman passes by, she should be too modest to look closely enough at them to recognize an acquaintance.

A young man has no right to pay his addresses to a young woman before asking leave of her father; if the father is dead or living at a distance, the young man must ask the permission of the mother or guardian.

It is not the correct thing for young people to keep their marriage engagement a secret from their friends, to deny it when questioned, or to act as if they were ashamed of it. The young lady should write to all her intimate friends and tell them of her engagement to be married, and the friends should call upon her or send notes of congratulation.

It is very crude and impolite to joke young people about getting married; marriage is honorable, and the subject should be treated as sacred and serious. It is very wrong for young people who are engaged to be married to do exactly as they please without paying any attention to the laws laid down by civilized society for their behavior.

Wedding invitations should not be printed or typewritten. If they are not engraved, they should be carefully written in good black ink on heavy white or cream-colored paper without lines.

When a wedding is very quiet and only the members of the immediate families are invited, it is customary to send out wedding announcements so that one's friends may know that she is married.

A wedding invitation should read as follows:

Mr. and Mrs. José Guzman  
Request the pleasure of your presence  
At the marriage of their daughter  
MARIA  
to  
Mr. JUAN BLANCO Y BARREO  
On Saturday morning, August first,  
Nineteen hundred and ten,  
At six o'clock.  
Santa Cruz Church, Manila.

A wedding announcement should read as follows:

Mr. and Mrs. José Guzman  
announce  
The marriage of their daughter  
MARIA  
to  
Mr. JUAN BLANCO Y BARREO  
On Saturday morning, August first,  
Nineteen hundred and ten,  
At Santa Cruz Church, Manila.

Mourning customs should always be governed by good common sense. While these customs are based upon the idea of paying respect to the dead, we must not forget the living. The mere observance of any custom does not necessarily express sincere grief. Black should be worn only when one is really in deep sorrow. However, putting on black is a question to be decided sensibly by those most deeply concerned; none but ignorant, small-minded people would criticise one for not doing so.

Among well-bred people, while one is in deep mourning, it is not customary for him to go to any place of entertainment. However, it is kind to send invitations to one's friends in mourning, to show that they are not forgotten.

## GRADE SIX.

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Ornamental, practical, and commercial sewing.—Study of nutritive value of foods and their different components. Food analysis. Relation of food to susceptibility to disease.—A study of the local markets.—Discussion of the various processes employed in cooking—boiling, stewing, extracting, broiling, roasting, and frying. Effect of heat. Experiments in cooking. A study of fish as an article of food. Recipes.—What to do in case of injuries, accidents, etc.—Common sense talks on marriage and homelife.—Mankind a social being. Purpose of calling, visiting, entertaining, etc. Duties of host, hostess, and guest. Abuse of hospitality. Lavish hospitality with limited means an injustice to the home circle.

### SEWING.

Make a sampler about 30 by 45 centimeters, teaching hem-stitching, tucking, ruffling, feather stitching, sewing on lace, setting in insertion, marking initials, etc. Each girl is to make a nightdress, underskirt, and a chemise or a princess slip for herself and is to have her own patterns to take home. For commercial work, make ladies' under-clothes.

### COOKING AND HOUSEKEEPING.

At the close of this year the girls should have some knowledge of the nutritive value of the common foods obtainable as well as of the method of preparing them attractively and in such a manner as to afford the greatest nutrition. They should by this time be familiar with the process of preparing most of the common vegetables as well

as quick breads such as hot cakes, corn bread, muffins, and baking powder biscuits. They should also know how to make such simple cakes as may be made at small cost and prepared in the average home kitchen, as drop sponge cakes, jelly rolls, doughnuts, and cookies.

Make a comparative study of tough and tender meat. Prepare brown stew of beef with dumplings, fried chicken, and roast pork with stuffing. Emphasize the fact that chickens and pigs must be fed properly and that pork must always be thoroughly cooked.

Give talks on fish, discussing their cost and nutritive value as compared with meat, and describing tests for freshness. Prepare boiled, broiled, and fried fish and fish chowder.

#### INTRODUCING THE STUDY OF FOODS.

Each member of the class should be required to prepare a sample menu for breakfast, lunch, and dinner for one day. In preparing this, only such foods should be listed as are customarily eaten in Filipino families as their everyday diet. After the completion of the list of all meals for twenty-four hours, the papers should be handed to the teacher.

When these papers are turned in, those that have names of foods put in to make the report look well should be thrown out and the papers returned to the pupils. Let the pupils prepare a second paper noting the number of times each food occurs. Study these lists, using questions similar to the following: Of the various kinds of food, do you eat more grain or meat food? Name all kinds of food derived from grain.

Grain foods are mostly made of a material called starch; when the food is eaten this starch changes to something like sugar. Many different foods contain starch; potatoes, camotes, rice, corn, and sincamas are largely made up of this

ingredient. Sugar and sirups come in the same group. These foods are called carbohydrates. Carbohydrates give strength, heat, and fat to the body. Is more than half the food you eat carbohydrates; that is, in the grain and vegetable group?

Name three meat foods. Eggs, fish, milk, and cheese come in this group. In addition to these, there are derived from the seeds of plants two common foods which, like the meat foods, make the body strong again after the muscles are worn out. These are beans and mongos and should be eaten by persons who do not have enough meat. Meat gives nourishment to the body, making the muscles and nerves strong again after they have worked hard.

Foods that have much oil in them are called the fats. Lards, fat meats, nuts, chocolate, and olive oil are of this class. They furnish warmth to the body and give it a well-rounded form. In cold countries about one-fourth of the food people eat is of this kind, as it helps to keep them warm. In tropical countries we do not need so much fat.

Pechay and many other green vegetables of various sorts do not have very much food value. Fruits contain some starch and other elements, but they generally contain more water than anything else. Their value for the body consists in their aid in digesting food and in other bodily activities. A very serious disease called "scurvy" often attacks people who do not have green vegetables or fruit to eat.

Salt also is needed to keep the blood in good condition and to help in other ways. Of course, one needs to drink plenty of good water.

A person could not keep well and strong by confining himself to any one of the groups of food here given. The proportion of each given in the following table is about the proportion that should be observed. Of the last group, no proportion is given; but a person should take all he cares for of those foods if they are of good quality.

Common foods.	What they give to help the body.	Proportion of each.	Name of group.
Rice. Bread. Camotes. Sugar.	Heat. Strength. Fat.	Seven-twelfths.	Carbohydrates.
Meat. Eggs. Fish. Mongos.	Renewal of muscles and nerves.	Three-twelfths.	Proteids.
Fat meat. Oil. Chocolate. Nuts.	Heat and fat.	Two-twelfths.	Fats.
Green vegetables. Water. Salt.	Aid in keeping healthy.	—	Minerals and water.

Write on the blackboard the words "animal" and "vegetable." Let the girls make as long a list as possible of such foods as belong exclusively to each class. Let them make another list of articles of diet belonging partly to one group and partly to another. See that these lists are fairly complete dietaries.

Many of these foods are necessary, appearing every day on the table. Make a list of these and another of the luxuries.

Write the names "carbohydrates," "proteids," and "fats," on the blackboard. Let the girls make as long a list as possible of such foods as belong exclusively to each class. Let them make another list of articles of diet belonging partly to one group and partly to another. See that these lists also are fairly complete dietaries. Study carefully the following table and prepare with the girls consistent family menus. Lead them to see that we often purchase needlessly expensive kinds of food and use the costlier kinds of meat, fish, and vegetables, when the less expensive ones are just as nutritious and, when rightly cooked, are palatable.

In the case of a good many families, the diet is apt to be

one-sided, including too much of the fuel foods and too little of the tissue builders—in other words, too much grease and starch in proportion to meat and fish. Much food is wasted; and not enough people know how to cook everyday food so as to get all the nourishment from it. Learning to cook the everyday foods properly is a very important part of a girl's education.

*Comparative value of foods in the Philippines calculated from analysis  
by Doctor Aron.*

Price.	Grams.	Names of food.	Grams.		
			Protein.	Fat.	Carbo-hydrates.
₱ 0.01	15.50	Fat pork -----	2.00	7.00	0.00
0.01	130.00	Radishes-----	1.50	1.00	5.00
0.01	35.00	Milk (caraballa)-----	1.00	2.50	2.00
0.01	52.00	Bananas-----	0.70	0.30	11.50
0.01	17.20	Lard-----	0.50	17.00	0.00
0.01	30.00	Caramelo-----	0.00	0.00	25.00
0.01	80.00	Mongo-----	20.00	1.50	50.00
0.01	140.00	Corn-----	13.50	1.50	95.00
0.01	120.00	Rice-----	9.60	1.50	90.00
0.01	32.00	Beans-----	8.30	0.50	15.00
0.01	30.00	Fish (taguiti)-----	5.40	0.60	0.00
0.01	320.00	Camote-----	5.00	0.00	50.00
0.01	55.00	White bread-----	4.00	0.50	30.00
0.01	13.60	Beef-----	3.00	1.60	0.00
0.01	20.00	Egg (duck)-----	2.50	2.15	0.10

Food is material which, when taken into the body, serves either to form tissues, or to yield energy, or both. Our food deserves serious study and thought, for upon it depend our health and our ability to work and to enjoy life.

In the bodies of ill-nourished persons, disease germs find favorable conditions for growth. In time of cholera or of smallpox, a large percentage of the deaths occur among the very poor, who are not able to buy sufficient nourishment. The relation between bad nutrition and tuberculosis, malaria, etc., is very well known; and often an improvement in the food is followed by a cure.

We need the right proportion of carbohydrates, proteids, fats, water, and mineral matter every day; and unless we

get these foods in their proper proportion, our bodies are not strong for work, for study, or for enjoyment. It has been found that a man at work keeps well and strong on about the following daily allowance: Proteids 100 grams, fats 48 grams, carbohydrates 497 grams, mineral salts 28 grams, and water 3 liters, much of which is contained in food.

The effects of bad nutrition fall most heavily upon children. It is not only that the elements necessary for building strong bodies and brains are lacking, but the improper food the children eat weakens their power of digestion so much that they can not change into blood that which they do eat. As a consequence of this, they remain poor and miserable and weak all through life. The lack of a goodly amount of proteid in the diet is the reason for the stunted, ill-developed bodies of many poor children.

The following computations have been made of the amount of each nutritive ingredient required daily at different ages:

Ages.	Proteid. Grams.	Fat. Grams.	Carbo- hydrates. Grams.
1½ years	42.5	35	100
2 years	46.5	36	110
3 years	50	38	120
4 years	53	41.5	135
5 years	56	43	145
8 to 9 years	60	44	150
12 to 13 years	72	47	245
14 to 15 years	79	48	270

*Amount of food required.*

A child under 2 years requires 0.3 the food of a man at moderate work.

A child of 3 to 5 years requires 0.4 the food of a man at moderate work.

A child of 6 to 9 years requires 0.5 the food of a man at moderate work.

A child of 10 to 13 years requires 0.6 the food of a man at moderate work.

A girl 14 to 16 years requires 0.7 the food of a man at moderate work.

A boy 14 to 16 years requires 0.8 the food of a man at moderate work.

Another danger of improper food is its effect upon the mind. The ill-nourished person is the first to fall into shame and dishonor. There is a proverb: "A hungry man is an angry man;" and famine is often the cause of crime and vice.

We have a great variety of foods—meat, fish, vegetables, fruit, bread, and sweets—all of which are vastly different in taste and appearance; but when they are analyzed, the chemist finds them all composed of one or more of the five foodstuffs which support life. These are proteids, carbohydrates, fats, mineral matter, and water. Tissue building, heat giving, and force making are respectively the principal functions of proteids, fats, and carbohydrates.

Carbohydrates yield energy in the form of heat as well as of force; and fats yield both of these and at the same time build one kind of tissue. Proteid is a tissue builder and also a fuel food. A temporary lack of one of these chief articles of foodstuffs may be made good by another. But while a diet of proteid with water and mineral matter may sustain life, a person placed on a continued diet of carbohydrates, or fat, or both, would eventually waste away and die.

The common proteids are the white of eggs, the curd of milk, the lean of meat, gluten in flour, and gelatin from bones and gristle. The chief function of proteid is to make muscle, tendons, and cartilage.

The common carbohydrates are sugar and starch; they are found chiefly in rice, corn, potatoes, sugar cane, camotes, and fruits and in many other grains and vegetables. When digested, this food is used in the body to furnish energy expended as bodily heat or in work; any surplus is stored as fat. It never builds any other tissue in the body, so must always be used together with the muscle-producing foods—the proteids.

The common fats are vegetable oil, lard, fat meat, nuts, milk, and chocolate. Fats are the most efficient fuel foods and are of more value in cool than in tropical climates. They are stored up in the body against times of need. It is thought that they pass through the mouth and stomach unchanged. The oil is divided into very small globules, which are carried away by the blood and deposited in the

spaces between the muscle bundles, there to remain until needed.

The commonest of mineral matter foods is table salt; but lime, iron, magnesia, potash, and phosphorus are also necessary. They are contained in various common articles of diet, especially in the yolks of eggs and in the greens that we use. Salt is a very necessary mineral; about 227 grams is the normal quantity in an adult body. Since this constantly wastes away, it must be replenished.

Water makes up about 65 per cent of the whole weight of the body. It, too, is wasting every minute and must of necessity be replenished. It is required for many purposes: First, to soften or dissolve solid foods so as to help in their mastication and digestion; second, to maintain a due bulk of blood and the structures of the body; third, to keep substances in solution or suspension while moving about in the body; fourth, to supply elements in the chemical changes of the body; fifth, to enable the waste material to be carried away from the body; sixth, to discharge superfluous heat by transmission through the skin and by emission through other outlets; seventh, to supply heat in convenient form to the body or to abstract heat from it. Some of these functions are performed by water in its liquid state, and others while it is in a state of vapor.

When distilled water can not be obtained, rain water is the best for drinking and for all household purposes in the Philippine Islands. When rain water is not obtainable, all drinking water should be boiled twenty minutes, after which it should be poured into clean jars covered with a clean cloth and then left to cool. The water should be poured from these jars, not dipped out. If water is so treated, it will be absolutely free from disease germs and much sickness will be prevented. The worst water for drinking is that which comes from wells. There are but few wells in the Islands whose water is fit for use.

It is said that an active person needs three liters of water every day. A great deal of this water is contained in the food, of course, but most people drink too little rather than too much water. The proper time for a person to take



A FIELD OF GABI.



PEPPER PLANTS.

water is whenever he feels thirsty. However, when he is overheated, he should drink only a moderate amount. Water in reasonable quantities may also be taken with meals, notwithstanding the fact that many people believe that its use with meals should be confined to rinsing the mouth after eating.

*Lessons in boiling water.*—Prepare a clean kettle with close cover, and a carbon fire with no smoke. Ask such questions as: Where do bubbles first form? Where are they largest? When are they largest? What happens just before boiling begins? What is the cause of these bubbles? How do you know when water is boiling? Does it get any hotter after it begins to boil? How long should water be boiled to kill all germs? What diseases come from drinking impure water? How must we care for the water after it has been boiled? What kind of fire do we need? Why? Why do we need a covered kettle?

#### THE TOWN MARKET.

Tell where the market is and what is its purpose. Describe the stalls and other things one sees there. How is the market important to the people of the town? What things have you eaten in the last twenty-four hours that were bought in the market? Are there screens over the meat and other food exposed in the market? Are they necessary? Why? Why should not customers be permitted to handle food? Is there any objection to placing fruits and vegetables in baskets upon the ground? If so, what? Is there any reason why animals should not be permitted to run at large in the market? What? (Discuss at some length half-fed dogs and pigs as a source of danger in cholera epidemics and at other times.)

Write a description of the market so that one who reads what is written will have a picture of it in his mind. Tell the prices of some articles sold in the town market. What is the price of rice now by the ganta? Of corn? By the cavan? By the liter? If the information given is conflicting or uncertain, committees of two should go to the stalls after school and find out exactly what the price is.

Blanks like the following should be prepared beforehand. Those who live in the rice country may report on the price of palay. In the blanks, enter the figures in their proper places and be ready to give an oral report and hand in the form the following day. Be sure to get the lowest figures from the market dealers.

*Rice and corn:*

Town market of .....	Date .....
Name of pupil .....	
Quality, ..... Price per ganta, ..... Price per cavan, .....	
Price per liter, .....	

The next day the committee should report orally, telling in short clear sentences where they went, what they said, and what the tienda keeper answered. If the figures entered in the forms are clearly incorrect or do not agree, the errors should be pointed out and the matter be referred to the same or a new committee. If the figures are reliable, the result should be stated so that all in the class may tell the facts briefly and correctly.

How many gantas are there in a cavan? At the market rate per ganta, what would a cavan of rice be worth? Is money saved by buying rice by the cavan instead of by the ganta? Are all ganta measures of the same size? Who has measured the capacity of a cavan of rice with a ganta measure?

Forms like that for rice and corn should be given to other committees for reports on the prices of camotes, beans, pork, bagoong, dried fish, and other articles appearing on the lists. The third day these committees should report orally on the articles they were to look up, and the forms containing the market figures should be returned to the teacher. They should be kept so that later entries may be made showing the changes in the prices of these articles. These entries should be made and conclusions drawn.

Name some of the other common foods for sale in the market. Tell the prices of the most common. Are they sold by the pound, by the kilo, by the ganta, by the liter, in bunches, or singly? Two committees should be appointed to make lists of the important kinds of produce with their unit

of sale and to enter the market prices in forms ruled like the following. If the market is very small, the list should be made on a market day.

*Market produce:*

Market of .....			
Date .....			
Name of pupil .....			
Produce, .....	Unit of sale, .....	Price, .....	Name of tienda-keeper, .....

The fourth day, have the report made on the various kinds of produce. If any of the forms are not neatly filled out, clean copies should be made to be kept by the teacher.

Of the various kinds of market produce, of what can you buy the most for 10 centavos? Of which the least? What kinds of produce may be bought only on certain days of the week? Are there some articles for sale now that can not be bought in some other month? Are there not some for sale now that can be bought at that time? Keep a record of the vegetables and fruits to be found in the market month by month.

#### PRINCIPLES OF COOKING.

Cooking is the art of applying heat to food in such a way as to bring about the following results: (1) To render it digestible; (2) to render it appetizing by the development of its own special flavor; (3) to combine different kinds of food material in such a way that each will render the other palatable; (4) to remove after the first application of heat certain portions which may not be palatable or digestible (these may be present either as waste, like bone; as excess, like much of the fat that may be used for other purposes; or as woody fiber, such as is found in many vegetables); (5) to add salt to the essential elements in its due proportion in almost every process, and sugar in some combinations, as well as other condiments, spices, or flavorings suitable to the principal food material entering into each dish. In addition to these five results of cooking may be given another and very important one—the destruction of all parasites and bacteria.

The effect of cooking the starch is to cause it to swell and break up the granules by bursting the inclosing sack.

Cooking dissolves the connective tissue of meat and fish, thus making it easier for the digestive juices to work upon the muscle fibers. Nevertheless, the cooked proteins, both meat and milk, take a longer time for digestion than the uncooked. A quantity of raw beef that will digest in two hours requires two and one-half hours when boiled half done; three hours when roasted half done; and four hours roasted well done. Boiling, steaming, stewing, extracting, roasting, broiling, and frying are the main methods employed in cooking.

#### EFFECT OF HEAT; DIFFERENT METHODS OF COOKING.

To understand which is the best way to cook the various foods, it is necessary to know the effect of different temperatures upon the food elements. Long-continued high temperature, together with more or less moisture, is necessary for the cooking of all starchy food. The amount of moisture and the length of cooking is determined by the character of the result desired.

Heat coagulates a proteid. This may be seen in the cooking of milk. The proteid thickens with heat, and forms a layer across the top. The white of egg, which is almost pure albumen, coagulates at a very low temperature; additional heat first brings out the flavor, and still greater heat makes it hard and indigestible. These statements are approximately true for the protein of meat and fish as well as of eggs. It is plain to see, therefore, that a high temperature is not desirable for the proteids.

Cold water is an extractive. It draws out the flavor of meats and the starch of the starchy vegetables. Therefore watery vegetables, such as potatoes, turnips, radishes, and onions, should not be put to soak in cold water; neither should meat, unless desired to make a broth or soup.

When boiling meat, we must remember that heat coagulates albumen and that the higher the temperature the harder will be the product. For this reason, all meats to be boiled are immersed in boiling water and kept boiling ten minutes; the result of this is that a coat of hard albumen is formed which will prevent the further escape of juices. If this treatment were continued, the interior

of the meat would become hard and indigestible, too. To avoid this, the temperature is allowed to fall below the boiling point; with long cooking at this simmering temperature, the meat within will be juicy and tender. Since the escape of the juices has in a measure been prevented, the water in which the meat is boiled is not so rich as it would otherwise be; but it is too good to be thrown away and may be used with vegetables in soup.

In stewing meat, the object is to cook the meat so that it will be tender and juicy and to serve with it the broth in which it has been cooked, which will also be rich and appetizing. To put the meat into boiling water would keep the broth from receiving the right amount of flavor and food; and to let it stand in cold water would enrich the broth but would lessen the good qualities of the meat.

The usual method is to cut the meat into small pieces, thus exposing a large amount of surface to the cold water into which it is then placed. Raise the temperature almost to boiling, and let it cook for several hours. If the stew boils it will not be good, for the meat will be hard and dry. It may look tender, for the long boiling will dissolve the connective tissues and set the muscle fibers free; but this only exposes them more effectually to the high temperature.

In frying, the object is to sear the surface of the food by subjecting it suddenly to intense heat and then to cook it thoroughly. The searing medium is fat. The hotter the fat, the more effectively it will sear the food. Fish, potatoes, doughnuts, and many other foods must be fried at the highest possible temperature. Fish requires a high temperature, because it contains much water; unless the fat is raised to a very high temperature before the fish is put to fry, the water in the fish will lower the temperature of the fat so much that it will not sear the fish and the fat will soak into the food. In frying any wet food, watch the fat carefully; when it shows bubbles of steam, make it hotter. A draft of air cooling the surface of the article to be fried will also cause it to absorb grease. This is the reason why it is important to fry in "deep fat."

The kettle of fat needs particular care. If the fat gets

too hot, it may be cooled quickly by throwing into it a handful of raw sliced potatoes. After being used, it should at once be put in a cool place; when cool enough to handle, it should be strained.

Milk burns very easily and for this reason should always be cooked in a double boiler. The object of boiling milk is to kill disease germs. Boiling the milk makes it much harder to digest; pasteurizing the milk is therefore preferable, particularly if it is to be used as food for little children.

To pasteurize milk, it must be kept at a temperature of 70° C. (158° F.) for twenty minutes. For description of the process, see page 75 of this bulletin.

#### EXPERIMENTS IN COOKING.

It is very important that the following experiments be performed by each member of the class and that the facts deduced from the experiments be reasoned out as nearly as possible by each girl. It is not essential that they be taken up in the order here given. The mere performing of the experiments is not sufficient; they must be repeated, if necessary, and the teacher by skillful questioning must make sure that each pupil understands fully how and why the results were secured. An account of the results obtained should be written out carefully in the notebooks.

*Experiment.*—Let a bowl of caraballa milk stand over night. In the morning examine it carefully. Remove the cream. Compare the cream and the skimmed milk. To the skimmed milk add a little vinegar. What has happened? What do the curds look like? What do they taste like? How is cottage cheese made? What does it taste like? What does it look like? Of what five things is the milk composed? Have the girls name other foods that contain fats, sugar, protein, and water, and write out a full account of this lesson in the notebooks.

*Experiment.*—Break an egg; separate the white and the yolk and spend a few minutes in discussing them. Then ask if the white of the egg is perfectly soluble in cold water. Let the girls experiment to see if they can dissolve it in cold water. What is the effect of heat upon it? Filter the

water in which the white of an egg has been dissolved and then boil the water.

This class of foodstuffs and their kind are the only flesh builders. Other foods are fuel foods. Remind the girls of their previous experiment with curds and tell them that the great value of meat, fish, eggs, and milk lies in the fact that they are rich in proteid. These are all of animal origin. Do any of vegetable origin contain proteid? Why do you think so? (Herbivorous animals must get their flesh builders from the vegetable kingdom). Peas, beans, lintels, and mongos are the principal vegetables which contain protein.

*Experiment.*—(a) Put an egg into a cold saucepan and cover it with boiling water; cover the pan, set it on the table, and leave it for ten minutes.

(b) Drop an egg into a saucepan in which water is boiling, cover, and put away as in (a).

(c) Put an egg into boiling water and leave it on the stove boiling for ten minutes.

Notice that in each case the egg has cooked ten minutes, but at varying temperatures. In the first case the white will be coagulated, the yolk still uncooked, and the egg flavorless; in the second, the albumen will be coagulated but soft, the yolk somewhat thickened, and the flavor better than in the first; in the third, the white will be hard and indigestible, but the yolk will be mealy and eatable. The reason for the difference between the time necessary to cook the yolk and that necessary for the white is that the yolk contains much fat. From these experiments it is easy to see that the best temperature for cooking proteids is below boiling.

*Experiments.*—Observe the fibrous appearance of a piece of round of beef. Can you see any fat among the fibers? Scrape with a knife first one side and then the other of one of the pieces of meat from which the juice has been squeezed; continue until only the fibers are left. Pick some of them apart with a needle. Try to break or tear them.

Each fiber is a bundle of tube-shaped cells filled chiefly with proteid substance. These tubes are covered and bound

together by a web of white connective tissue threaded with tiny blood-vessels. Toward the ends of the muscles the fibers dwindle down until there remains only a firm mass of connective tissue called tendon. The contents of the tubes and blood-vessels may be scraped out, leaving these with the connective tissue in a pale-colored stringy mass.

To show the action of cold water and of salt upon meat, cover a bit of raw meat with cold water and observe how quickly the water becomes red. What does this show? Is anything besides blood drawn out? Strain the water and heat it. Has any albumen dissolved in the water? Sprinkle a bit of raw meat with salt. What does the salt do to the juices of the meat? How do these afterwards act upon the salt?

What conclusion do you draw from these experiments with regard to:

- (a) Putting meat into water to wash it?
- (b) Salting meat before cooking it?

*Experiment.*—The presence of gluten in flour may be demonstrated by letting each girl wash thoroughly a small quantity of flour tied loosely in a thin cloth. The starch and sugar are washed away. The gummy mass left behind is almost pure proteid.

Iodine dropped upon starch produces a violet color and may be used in this manner to prove the original presence of the starch and its disappearance.

*Experiment.*—Examine the end of a shin bone sawed in two. Where is it spongy? Where soft? The soft substance is marrow. Try to bend or break the bone. Observe the tough fibrous covering on the ends of it.

Put one piece of the bone into strong vinegar. After a few days, compare it with the other piece. Has the acid changed the shape of the bone? Its size? How has it affected it? See if you can tie it into a knot. What makes bone hard? What has the acid taken out of the bone?

Tie a wire around the other piece of bone and leave it for half an hour in a hot fire. Bury it in the charcoal so that it will not be blackened by the smoke. Remove it by means of the wire. How has the bone been changed? Does it break easily? What part of the bone has been burned?

*Experiment.*—Add two tablespoonfuls of cold water to one teaspoonful of baking powder. Add two tablespoonfuls of hot water to another teaspoonful of baking powder. Which foams the more?

Explain how biscuits are made light. In baking biscuits, why is it necessary to have the oven hotter than when baking ordinary bread? What would be the effect on the biscuits if hot milk were used in mixing the dough?

#### A STUDY OF FISH.

*Discussion and experiment.*—Fish is a very good food and is rich in proteids. When it is eaten with food rich in carbohydrates, such as rice or camotes, and served with some kind of sauce or gravy, it makes a very good meal.

Like meat, the flesh of the fish may contain parasites, and if not perfectly fresh it may cause a severe sickness called ptomaine poisoning. If fish is thoroughly cooked, the danger from parasites is removed; and if only fresh fish is eaten, the danger of ptomaine poisoning is avoided. Canned fish must always be used at once after opening. There is very great danger in eating any canned meat or fish which has been left in the tin from one meal until the next.

To pick out a fresh fish, see that the eyes are clear, that the scales are brilliant, that the gills are a bright red color, and that the body is firm so that no mark is left when it is pressed by the fingers.

Examine a piece of raw fish. Try to describe it. Tell how it resembles beef or pork, and how it differs from them.

Have ready three small stewpans, one containing cold water, and the other two boiling water. Into one of the stewpans containing boiling water put half a teaspoonful of salt, a teaspoonful of vinegar, one clove, one pepper corn, one laurel leaf, and a slice of onion.

Into each of the three stewpans place at the same time a piece of fish. Allow the one in cold water to come to the boiling point and keep it at that temperature about eight minutes. Keep the other two hot, but not actively boiling,

about eight minutes also. What difference was seen in the three pieces of fish immediately after they were first dropped into the water? What caused this difference? What appeared on the cold water? What was the cause of this? Why did we add vinegar and salt? Why were the clove and pepper used?

Taste each piece and decide which is the best method to use in boiling fish. In order to get the best results, fish should be boiled slowly. Why? Let the class copy from the blackboard the following rule for boiling fish and also the recipe for the sauce:

*Boiling fish.*—Put into the kettle as much water as would enable the fish, if it were alive, to swim about easily. Add one-half cup of vinegar, one teaspoonful of salt, one onion, one dozen whole black peppers, and three laurel leaves. After cleaning the fish, sew it into a piece of clean white cloth that has been fitted to shape. Cook slowly for thirty minutes, more or less, the length of time required being determined by the size of the fish. When cooked, unwrap the fish and place upon a platter; pour over it a sauce made as follows:

Cook together one tablespoonful of pork fat and one tablespoonful of flour; stir until smooth, then pour over it gradually one cupful of water in which the fish was boiled, and add two chopped hard-boiled eggs and one teaspoonful of lemon juice.

*Frying fish.*—Let each girl prepare a small fish for frying. Clean, wipe dry inside and out, sprinkle with flour, and season with salt. Why should a deep frying pan or kettle be used for frying? How do you know when the fat is sufficiently heated for frying fish? What difference do you observe between immersing in hot fat and in hot water? What is the cause of the sputtering when the fish is immersed? How does the fish change its appearance? Why? What takes place when the fish is browning? Why did no crust form on the boiled fish? The moment the fish is done to a good brown, take it from the fat and drain. Garnish with quarters of lemon.

*Stuffing and baking fish.*—Clean the fish, which should

be at least thirty centimeters (one foot) long; rub it inside and out with salt and pepper; stuff; and sew it up. For the stuffing use one cup of bread crumbs, three tablespoonfuls of pork fat, one-fourth teaspoonful of salt, one tablespoonful of chopped onion, and a little hot water.

The head and tail should not be removed, but may be wrapped in greased paper to retain their shape as much as possible. Rub lemon juice or lime juice into the fish; on each side cut gashes about six to eight centimeters apart, into which insert strips of fat pork. Grease a pan, put in the fish, and put more slices of pork around it. Bake quickly, basting every few minutes with the fat in the pan. Allow thirty-three minutes to a kilo (fifteen minutes to a pound).

Give each girl a small fish; the object of this lesson is to give her an opportunity to do all the work for herself. Require her to stuff the fish, sew it, and follow the same directions as used for a large fish. Have the gashes on opposite sides alternate. Bake all the fish together in a large pan, each girl's name being attached to her fish. Some extra strips of pork must be placed in the pan. Do not forget to baste the fish.

#### RECIPES.

##### *Stuffing for fish (individual).*

Mix in the order here given: One-fourth cup of bread crumbs, one-sixteenth teaspoonful of salt, a little pepper, one-half teaspoonful of chopped onion, one-half tablespoonful of melted pork fat, and a very little hot water.

##### *Brown beef stew with dumplings.*

Cut one kilo of beef into small pieces. Melt some of the fat in a frying pan and brown in it one-half of the meat. Put the rest of the meat into a kettle with one liter of cold water; let it stand twenty minutes and then heat slowly. Transfer the browned meat to the kettle. Thicken the fat with two tablespoonfuls of browned flour; add half a liter of boiling water and stir. When thick, strain into the kettle; add one cupful of carrots cut into cubes, and season with salt and pepper. Cover and simmer; when half done add half a liter of potatoes cut into cubes and eight or ten dumplings. After dropping in the dumplings, do not take the cover from the stew, or they will surely be heavy.

**Dumplings.**

Beat two eggs, and add one-fourth teaspoonful of salt and two tablespoonfuls of milk. Sift one cupful of flour with one teaspoonful of baking-powder; add the egg mixture and more flour, if necessary, to make a thick batter; drop by the teaspoonful into the boiling stew. Cover and cook ten minutes without uncovering the kettle or stopping the boiling.

**Fried chicken.**

Clean and cut up the chicken. Dredge each piece thickly with salt, pepper, and flour. Put one-half cupful of lard into the frying pan and when very hot put in the chicken and fry slowly until it is done. Watch it carefully to prevent its burning. When done, arrange the pieces on a hot dish.

Pour out of the frying pan all the fat but about one tablespoonful; to this remainder add a tablespoonful of flour, mix thoroughly, and add a cupful of milk or coconut milk. Stir; season with salt and pepper; and pour over the chicken; or serve in a bowl, if it is to be eaten on the rice which is served with the chicken.

*Guláman.*—Guláman is a kind of sea moss and may be picked up along many of the beaches; it may also be bought in many of the Chinese stores at a very slight cost, cleaned and bleached and ready for use. It comes in thin strips about a foot long. These should be cut into short lengths, which should then be carefully washed and stirred into boiling water to dissolve. When thoroughly dissolved, strain.

Guláman is not only a very nourishing food, but it is also of the greatest service as a means of presenting other articles of diet in an attractive and easily assimilated form. As an article of diet for invalids it is of especial value. Nourishing soups, jellies, blanc mange, and other simple dishes may be made by this means and will often tempt a patient when ordinary methods fail. In all recipes for preparing guláman, allow one cupful of the cut guláman to three cupfuls of liquid, and leave one-half hour to harden.

**Guláman recipes.**

Blanc mange may be made by stirring the dissolved guláman into a cupful of flavored milk,

Or it may also be stirred into a cupful of coconut milk flavored with lemon juice,

Or to one egg beaten light and sweetened, add a teaspoonful

of lemon juice, and fill the cup two-thirds full of coconut milk; then finish filling with the dissolved guláman,

Or beat the whites of two eggs very light, stir into them two mashed bananas, put this mixture into a pint bowl, add one and one-half cups of milk or coconut milk, fill the bowl with dissolved guláman, and stir well. In order that the egg may remain light and the jelly when taken from the bowl may be white and foamy throughout, the guláman should not be poured over the egg and banana until it begins to cool; then the mixture should be stirred constantly until it begins to thicken.

Pineapple may be shredded with a fork, then sweetened, and set as a jelly with guláman.

A cup of beef tea or extract of beef may be converted into a tempting mould of jelly in this same way.

Chicken jelly may be made by cutting neat pieces of the chicken and setting it with guláman in well-flavored chicken broth, using one cupful of guláman to three cupfuls of liquid.

Claret, lemon juice, orange juice, or any fruit juice may be converted into a very pretty and delicious jelly in a very few minutes. These fruit jellies are attractive when cut into tiny cubes and served with sweetened coconut milk, or with a soft custard.

#### Hoe cakes.

Use half a liter of corn meal, one-half teaspoonful of salt, and sufficient water to make a batter. Put the corn meal into a bowl and add the salt; pour over it sufficient boiling water to just moisten the meal and let it stand ten minutes. Then add cold water until the batter will drop nicely from a spoon. Bake in the same way as hot cakes.

Slice some fat pork thin and fry crisp; then serve the hoe cakes with a piece of pork on top of each.

#### Hot cakes.

Take three cups of flour, two teaspoonfuls of baking powder, and one teaspoonful of salt. Mix well together and add two well-beaten eggs and enough milk or water or coconut milk to make a thin drop batter. Bake at once on a well-greased iron frying pan. Make the cakes thin. Brown on one side and then on the other. Turn them only once.

#### Biscuits.

Take one liter of flour, one teaspoonful of salt, three teaspoonfuls of baking powder, one tablespoonful of lard, and half a liter of cold water. Sift together the flour, salt, and baking powder, rub in the lard, add the water, and mix to a smooth dough.

Flour the board and turn out the dough roll about one centimeter thick. Cut this into small disks and lay them close together on a greased baking-tin. Bake in a hot oven; unless it is hot

they will not be light and tender. Another secret in making good biscuits is to work rapidly; the dough should be in the oven five minutes after the flour is sifted.

#### Sandwich biscuit.

Prepare the dough as in the preceding recipe. Roll out the biscuit a little thinner and add a thick layer of jelly or devilled ham; cover with another circle of dough, and press together. Brush the tops with milk. Bake on a greased pan in a hot oven.

#### Rolled jelly cake.

Take four eggs, two-thirds cup of fine white sugar, two-thirds cup of flour, one-fourth teaspoonful of salt, and one-half teaspoonful of baking powder. Beat the egg yolks and sugar till light. Add the sugar, flour, salt, and baking powder, then the stiffly beaten whites of the eggs. Mix lightly together. Bake in a thin sheet in a hot oven. As soon as they are done, turn them out quickly upon a clean towel dipped in water and wrung as dry as possible. Spread with guava jelly or other jelly or jam, roll up, and dust with sugar.

#### Tea cakes.

Take one-half cup of fine white sugar, one-half teaspoonful of cream of tartar, one-half cup of flour, the whites of four eggs, and one teaspoonful of orange juice. Sift the sugar, cream of tartar, and flour together, and gradually beat into this the stiffly beaten whites of the eggs. Flavor and drop from a teaspoon on greased paper. Bake in a moderate oven ten or fifteen minutes.

#### Coriander cakes.

Take two cups of sugar, eight eggs, three cups of flour, one teaspoonful of baking powder, two tablespoonfuls of coriander seeds or one tablespoonful of anis seed, and one teaspoonful of lemon juice. Beat the eggs and sugar together, add the flour and baking powder sifted together, then the seeds and lemon juice. Beat hard for five minutes, drop in spoonfuls on greased tin, and bake in a hot oven five or six minutes.

#### Gem cakes.

Three cups of flour, three teaspoonfuls of baking powder, one-half teaspoonful of salt, one cup of sugar, three tablespoonfuls of lard, one teaspoonful of caraway seed, and enough milk to mix to a soft biscuit dough. Roll out one centimeter thick, cut into disks, and bake in a flat pan in a hot oven.

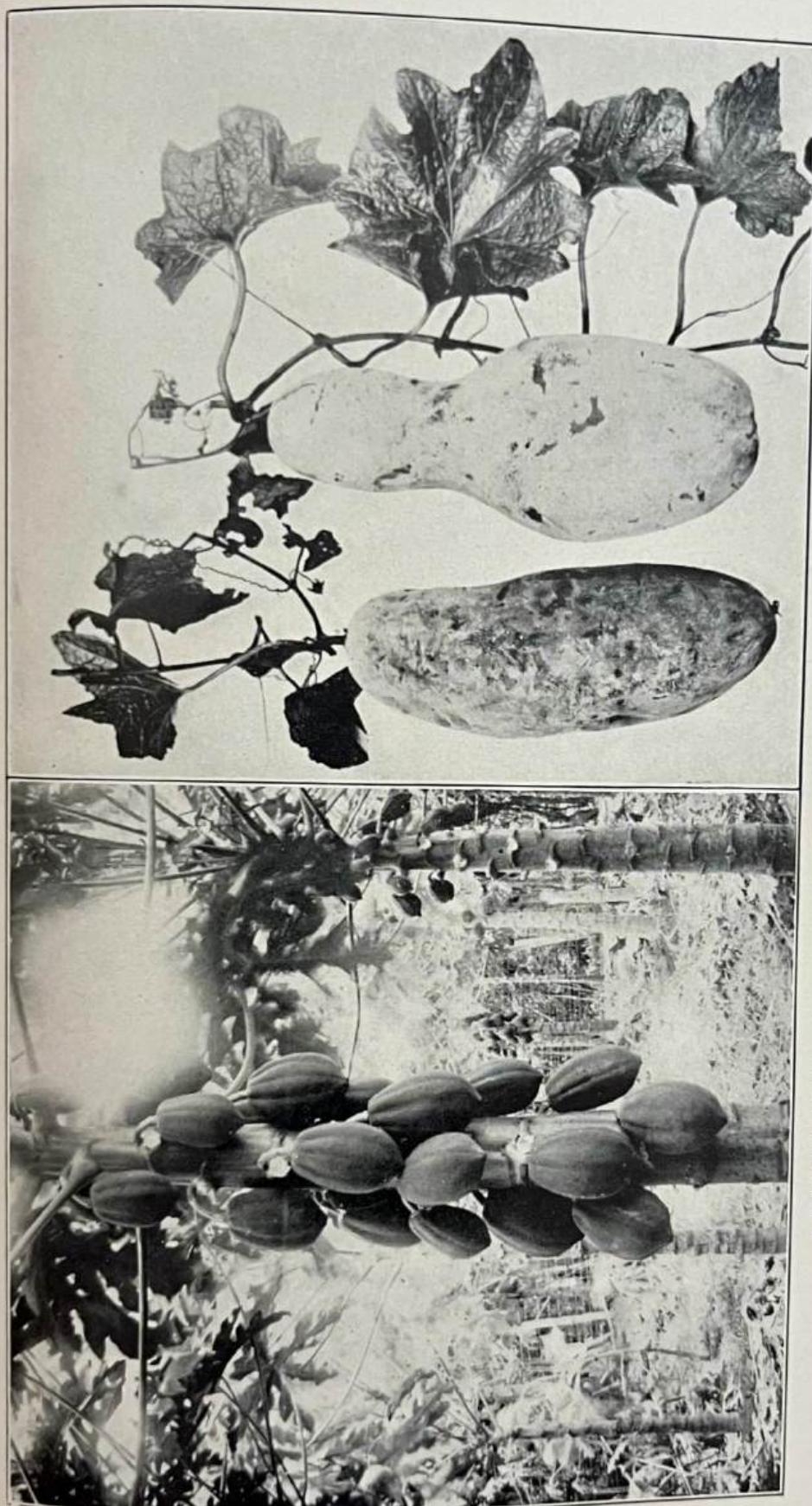
#### Washington pie.

Three eggs, one and one-half cups flour, one cup sugar, one-half cup milk, two tablespoonfuls of butter, one teaspoonful baking powder, one-half teaspoonful flavoring. Separate the whites and yolks of the eggs. Cream the butter and sugar together and sift together the flour and baking powder. Add the yolks of the eggs to the milk.

CONDOL.

PLATE XIII.

A PAPAYA TREE.



Add a little of the flour to the creamed butter, then a little of the milk and egg, stirring the mixture well and alternating in this way until all the ingredients are used. Beat vigorously; then beat the whites of the eggs stiff, and fold this lightly into the mixture. Pour at once into four round pans and bake in a hot oven about thirty minutes. Insert a straw; if it comes out dry, remove the pan from the oven. Spread three of the cakes with a tart jelly and sprinkle powdered sugar over the other one. Place the cakes one on top of the other, the one covered with powdered sugar forming the top layer.

#### Chicken pie.

Boil the chicken in salted water until tender. Remove the large bones; dredge with salt, pepper, flour; and brown in hot lard. Put this into a deep dish. Slice some potatoes and onions very thin and put them with the chicken. Pour over it all a sauce of gravy made of the broth in which the chicken was cooked, first thickening the broth with flour—one tablespoonful to a pint. Lemon juice may be added. Cover with a biscuit dough. Make a hole in the center of the crust for the steam to escape. Bake about thirty minutes.

#### Bread pudding.

Soak two cups of bread crumbs in four cups of milk. Beat four eggs and mix with one-half cup of sugar, one-half teaspoonful of salt, one small spoonful of nutmeg, two tablespoonfuls of butter, and one cup of raisins (boiled one hour). Mix all the ingredients in a greased baking dish and bake until firm and brown.

#### Devilled crabs.

Pick the meat from six boiled crabs and cut into fine bits; add one-third as much bread crumbs, two or three hard-boiled eggs chopped, the juice of one lemon, salt and pepper, and a piece of butter the size of a walnut. Clean the shells well, and fill them with the mixture. Place bits of butter over the top, and brown in the oven.

#### Baked tomatoes and eggs.

Peel small solid tomatoes and take out the centers. Break an egg into each tomato. Stand them in a baking dish, sprinkle a little salt and pepper over each, cook for ten or fifteen minutes in an oven that is not too hot, and serve on slices of toast. Pour a tablespoonful of white sauce over each.

#### Macaroni.

Have a kettle nearly full of boiling salted water. Break the macaroni into small pieces and drop them into the water. Boil until tender (about thirty minutes). Drain in a basket and pour cold water through to remove pastiness. Reheat in butter, or in

a good brown gravy, or in tomato sauce, or in a white sauce. Sprinkle thickly with grated cheese, and brown in the oven.

Many of the forms of paste sold in the native markets may be prepared in this way.

#### HYGIENE.

#### FIRST AID IN CASE OF INJURIES, ACCIDENTS, ETC.

##### THINGS WHICH ANY ONE CAN DO.

In any accident the chief requisite is presence of mind. Girls ought to be taught that it is both wrong and cowardly to allow themselves to lose their heads and scream, or to faint at the sight of blood, and so become perfectly useless in time of accident. Impress upon them that it is a woman's duty to have her nerves so under control that she can help in time of trouble and that a very important part of a woman's education is knowing how to care for the sick and suffering.

This practical knowledge is invaluable and may be put to a test at any moment. Hardly a day goes by without somebody in a thickly settled neighborhood meeting with a bruise, a cut, a burn, or some more serious accident. Every woman should have the knowledge that enables her to do the right thing and the self-control that enables her to do it properly and at the right time.

The first thing to do in any serious accident is to send for a surgeon; at the same time send him a written statement of what has happened, so that he may bring with him the things he will need to use. While waiting for the surgeon, make the injured person as comfortable as possible, and do not let people crowd around him. Many persons are lamed, made blind, or disfigured in some way for life because they have not received proper treatment at the time of some accident.

Let us consider some of the common mishaps. A sprain is a soreness of the ligaments in a joint. Fingers, wrists, and ankles are often sprained. A bruise is an injury to the flesh caused by a blow, a pinch, or a fall.

Bruises and sprains should be bathed long in cold water

and wrapped in cold wet cloths. There are many medicines that will take out soreness, but cold water is nature's own remedy and is always at hand. When bones are broken or dislocated, only a surgeon can care for them properly. Handle the injured part as little as possible and keep the patient quiet until a surgeon arrives. Cloths wrung out of cold water and applied to the injured part will keep down the swelling and relieve the pain.

#### TREATMENT OF WOUNDS.

When there is a cut that does not bleed badly, the first thing to do is to wash out the wound well with water that has been boiled and allowed to cool, or with bichloride of mercury solution. Then bind it up with clean soft white cloth, first placing over the wound a pad of white cloth saturated with the same solution. When the cut is long or the ends of the wound do not come together well, a surgeon should be summoned, as putting in a few stitches will prevent an ugly scar.

A cloth folded many times should be tied tightly over a wound that bleeds badly. If this does not check the blood, tie a bandage very tightly above the wound; a pencil or a piece of bamboo stuck under this will act as a tourniquet. When possible, in addition to this it is better to place a hard pad over the course of the artery. A surgeon must be called immediately; for if the blood is shut off in this manner longer than an hour, gangrene is likely to set in. When the wound is not serious enough to require the assistance of a surgeon, wash the skin about the wound with a weak solution of carbolic acid or bichloride of mercury and bring the torn edges together before putting on a clean white cloth. Never put a colored cloth around a cut.

Wounds made by old tins, rusty nails, etc., if neglected, often lead to blood poisoning and make a great deal of trouble, sometimes causing death. Keep the wounds clean by washing them twice a day with a carbolic acid or bichloride of mercury solution. This will kill the bacteria or prevent their growth. No mistake can be made by engaging the services of an experienced surgeon.

## BURNS.

The object is to stop the pain by excluding the air. Wring soft white cloths out of coconut oil, olive oil, or clean lard, and lay them over the burn; or cover the burned surface with the white of egg. It is always best to send for a doctor in case of a bad burn. Many persons die from comparatively small burns.

If the clothing catches fire, throw the person down upon the ground so that the flames will not rise toward the mouth and nose. Smother the flames with earth and the hands; work quickly or the person will die. If the body is burned badly, do not pull off the clothes, but cut them away bit by bit. Be very careful not to break the blisters.

## FAINTING AND FITS.

It sometimes happens that a person becomes unconscious from a fall or from weakness. Place him on his back with the head as low as the feet; give plenty of fresh air; loosen the collar and waist band; and fan the patient. Cold water may be sprinkled upon the face. If he does not become conscious in a few minutes, send for the doctor.

For fits, generally called epilepsy, loosen all the clothing, and put a rolled handkerchief between the teeth to prevent the tongue being bitten. Have the head on a level with the feet. Give plenty of fresh air, but no medicine.

## POISONING, BEE STINGS, ETC.

If a person eats something which poisons him, send for a physician immediately. In the meantime, give the patient something to make him vomit.

If an ant or bug gets into the ear, pour in a few drops of coconut oil or melted lard. This will kill the insect. Then wash it out with warm soapy water.

The stings of bees, wasps, and hornets of course are not serious, although they are very painful for a few minutes. To relieve the pain, wet some earth and put it upon the wound, or put on cold water at once. If the sting of the insect is left in the flesh, remove it before putting on either the mud or the cold water.

## ETHICS.

## SENSIBLE TALKS ABOUT MARRIAGE AND HOME LIFE.

We hear the phrases "pretty girl" and "beautiful señorita" until we can not wonder that many girls get the notion into their heads that all that is expected of them is to dress daintily and to look pretty. It is both a pleasure and a duty to make oneself as attractive as possible; but being pretty for the few short years that nature allows woman to be young and fresh is not the whole end and aim of life. Every girl who has been taught to think and reason should take a more serious view of life.

Girls must not think that because they are not going to practice medicine or law, or build bridges, or become priests, that they will not have any use for an education. They must realize that their work is just as important as men's work and that they are not inferior to men in any way. Human beings are so constituted that man and woman are mutually dependant upon each other.

The greatest work of woman is the education of her children. All the time she is caring for their bodies, she is influencing their minds, their manners, and their morals, and is either consciously or unconsciously helping them to form the habits that will govern their actions in after life. Men and women are but the mother's little children grown up.

It is just as important that a woman should understand how to run the home properly as that a man should understand the business which brings in the money to support the home. A man's business ability depends largely upon his health, and his health depends in a great degree upon the everyday conditions existing in his home. If a woman does not know how to keep a home clean, what food to buy, and how to prepare it properly, her husband will not have a strong body with which to perform his work, or a brain that will enable him to think clearly.

The influence of women is really greater than is usually conceded; girls have as much to do with molding public opinion as boys have. Each has her own place among her circle of friends; and if she lives up to her noblest thoughts, if she always does the best she is capable of doing, and if she

helps her companions—both boys and girls—to do the same, she will have a tremendous influence for good in the progress of the country.

A girl who has the advantages of an education ought to keep her eyes open for opportunities to put that education into practical use. She must cultivate a spirit of sympathy and helpfulness. She has learned to think for herself and to reason consistently; and she has at her command the means of finding out the why of things. If she sees or hears something that frightens her, she should not cover up her head and imagine dreadful things. She has learned to say with her tongue that there are no ghosts, no witches, no fairies; but she must have courage enough to investigate a little and prove to others that *aswang*, *brujas*, *anting-anting*, *sirena*, *wak-wak*, etc., are nothing more than creations of the imagination—things that educated people with common sense are not afraid of. She must not talk about things, or listen to stories, that will make nervous people afraid to be alone; for it is her duty to help others to lead better, nobler, and saner lives.

Educated girls should also object to listening to the common vulgar stories which are often told as jokes. They should not remain where such stories are being told; and when they have homes of their own, they should never tell such stories themselves or permit others to tell them in their presence.

Women should always remember to attend to their toilet duties in the privacy of their homes, and they should teach the children of their families to do the same. This is one of the first and surest marks of refinement. Civilized people do this, not because they are overmodest or because they are ashamed to attend to these matters, but because it is not refined or polite to do so in public.

Many school girls have an infinite capacity for chattering and saying pleasant nothings, talking for hours at a time about the most trifling matters. At thirteen, fourteen, or fifteen years of age they go to dances and entertainments and begin to receive the attentions of young men; but girls of this age, if they are to reach a high type of womanhood and help the coming generation to be wiser than the present

one, must not concern themselves with lovers and marriage. It is very thoughtless and crude to joke and tease about matters of this kind; for to do this is to jest about that which is holy and which should be spoken of only with reverence.

We know that the natural consequence of love is marriage; and a girl of fifteen can not wisely meet all the responsibilities of married life. Neither her brain nor her body is properly developed at that age. It is very common, especially among barrio people, for a woman of fifteen years to become a mother; but her organs are not fully developed, and they need years in which to grow strong and ready for the work of child-bearing. It is a great mistake for girls to marry so young; for by so doing they injure their own health and their children can never be so strong as those whose mothers have attained to their full growth. You may pull a rosebud apart and make it look like a full-blown flower; but it will die very soon and its beauty will be lost forever. The bud needs to grow and unfold; and if left to do this in accordance with its nature, it will become a perfect flower. The girl is the bud of the woman; and if she is to become physically perfect, she must await nature's own good time. Twenty-two or twenty-three years is young enough for a girl to marry.

The young people of to-day are forming the character and determining the destiny of the nation of the future. They can decide what they want the nation to be; and by their own lives they can realize that desire. We have seen the farmer choose his seed corn from the best ears and select the rice which he is to plant from heads which are full and perfect. He does this because he wants to raise the best possible crop. Children can not be born with strong intellect, or force of character, or bodies well-proportioned, if the parents have none of these things to give.

If all girls were to take proper care of themselves and make of themselves the strongest, the best, and the noblest women possible, there would be within a few years a great difference in the individuals of the human race. Every girl must remember that her children will inherit her faults as well as her good qualities; so it is her duty to form good

traits of character for her children to inherit. It is a great truth that the young people of to-day are making the world what it will be one hundred years to come. People are trying very hard to make the world better; but the time when they could have done the best work was when they were little children. If all the children from now on were to be truthful, honest, studious, and industrious, the men and women of the future, who will be only the children of to-day grown up, would have all these desirable qualities; and their children in turn would receive those qualities in an even greater degree as an inheritance.

There is a saying that if you wish to train up a boy to be a gentleman, you must begin with his grandfather. Suppose you begin now to train yourself as if you were your own little girl. It will not be difficult for you to decide what you want your daughter to be. You will surely want her to be virtuous, honest, truthful, and courteous. So if you find yourself lacking in any of these qualities, you must remedy the defect in yourself if you wish your daughter to inherit from you a good character.

After your children are born, you can not give them any different inheritance; all that you can do then is to help them to overcome any bad inherited traits. But in overcoming your own faults, you are creating a better inheritance for your children; thus your influence on their lives now is greater than it will be after they are born. Our value as citizens lies in what we are, not in what we may possess.

While the character of the child is in a very great degree determined by the mother's influence, still the mother is not entirely responsible for what her child is going to be. The child partakes of the nature of each parent and so belongs equally to both; each has an equal responsibility in bringing this new soul into the world. Since this is true, it is necessary for men and boys to be as careful of their conduct as it is for women and girls.

Everybody feels that a stain on the character of a girl can never be removed. She is taught from her earliest childhood that because she is a girl she must be careful of her conduct and that she must not go to places having a bad

reputation or associate with bad girls. And yet she is not taught that it is just as important for a boy to live purely; nor is she taught to be so careful in her association with boys as with girls. This is all wrong.

If girls would begin now to show by their choice of associates that men are expected to conduct themselves just as properly as women, public opinion on this point would soon change. A girl should choose her boy friends with just as much care as she chooses her girl friends. Being able to dress well, to dance gracefully, and to pay pretty compliments does not qualify a man to become a lover and a husband. Boys should be made to feel that if they are to have a girl's friendship, they must be noble, good, and true, just as they expect her to be.

If "pillos" harmed nobody but themselves, it would not seem so wicked for older people to laugh and wink and joke about them. But every girl ought to know that a man who is vile in his habits will bring suffering to his wife and children, and that the immorality of fathers is to blame for idiocy among children and that it often causes blindness, lunacy, and repulsive skin diseases of various sorts. Immorality causes much agony, both mental and physical; and it is just as important for the good of the world for men to be physically and morally sound as it is for women to be so.

#### DUTIES OF HOST, HOSTESS, AND GUEST.

We are all more or less social beings. We like to have people come to our homes. Visiting is one of the social customs which all people have in common—a custom that could not well be spared, for it is a simple way of showing fellowship and good will.

A hearty welcome makes up for almost anything else that is lacking. When a hostess offers the best she has, she should make no apologies, no matter how poor that best is. Excuses are very rarely in good taste and often savor of insincerity. Remember that gentlefolk must be sincere in word and act. Such as you have, offer gracefully; for in the spirit of the giver lies the beauty of the gift.

Many people are so hospitable that they entertain more lavishly than they can afford. This custom should be condemned. One must be just to his family before he has any right to be generous to his friends and acquaintances. Dances or entertainments are often given involving the expenditure of money which might better be laid aside against a time of sickness and famine or for the education of the young people in the home.

A guest should make as little trouble as possible and should show that he is having a good time and appreciating what is being done for his entertainment. He should help his host to make things agreeable for the others; and he should offer no apologies for the trouble his visit occasions.

When one has been invited to a dinner or to any kind of entertainment in a home, he must call and pay his respects to his hostess within a week after the entertainment. One ought never to leave the house after an entertainment of any kind without bidding the hostess good-by and thanking her for the pleasure which the occasion has afforded.

When one's friends are sick or in trouble, it is courteous to visit them and show sympathy. Many people can not endure to speak of their troubles, so they should not be plied with questions and the subject of their sorrow should not be introduced into the conversation at all. If a person wishes to talk of his trouble, he will; if he does not wish to, it is his privilege to be silent. Your coming expresses your sympathy; curiosity is always vulgar and is almost always cruel. When you visit the sick, be cheerful and do not stay long enough to tire the sick person or make extra work for the members of an anxious household.

A short visit is a call. When making a formal call simply to pay one's respects, ten minutes is quite long enough to stay. The polite hours for calling vary in different localities, and one must adopt the custom of the town in which he finds himself. The hours between 5 and 8 p. m. are usually correct. A call ought to be returned within a very few days. Callers must pay their respects

to the hostess before greeting others in the room. When a second caller comes, the first caller should take his departure soon, unless he has a very good excuse for out-staying the caller who came later. The reason for this is quite plain. The first caller had an opportunity to talk with the hostess before the second one arrived. The latter may have something to say which he does not care to say in the presence of other callers. When taking leave one ought to choose a moment when there is a lull in the conversation, and should then shake hands with the hostess, letting one bow include the others in the room. It is not necessary to shake hands and bid each a separate good-by.



GRADE VII GIRLS CANNING AND PRESERVING FRUITS.



A BLUE-FLAME PETROLEUM STOVE.

PLATE XIV.

## GRADE SEVEN.

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Care and use of the sewing machine and its attachments. Practical sewing, making articles for the girls' use in their homes. Coöperation of the home in the sewing work.—Review of work in cooking for preceding years. Cooking and serving meals. Study of practical menus. Canning and preserving fruits. Jelly making. Recipes.—Review and discussion of points in practical hygiene. Coöperation with the health authorities in the prevention of diseases and the protection and promotion of the public health.—Reading extracts from some standard book of etiquette. Practical letter writing.—General review.

### SEWING.

Study the care and use of the sewing machine and its attachments. A book of instructions comes with each machine, and extra ones may be obtained from the manufacturers. Impress upon the girls that the use of the sewing machine does not lessen the need of careful hand work. There are many finishing touches that can not be done on any sewing machine. As much skill is required for neat machine work as for hand sewing; and results are never satisfactory without careful basting.

The machine should be kept well oiled, free from dust and gum, and it should be run evenly. In case it becomes gummed, a drop of petroleum on the parts that have been oiled will remedy the difficulty. Remove the shuttle and run the machine rapidly for a few moments, then wipe off the petroleum and oil the machine carefully, using a good grade of oil. Insist that the machine be wiped carefully and thoroughly before any work is placed upon it.

To insure an even stitch, the thread on the bobbin should be wound evenly and carefully and the tension of both threads should be equal; otherwise the stitch will not be perfect. By careful manipulation of the machine, much time may be saved in fastening the threads at the ends of tucks and hems. For example: On sheets begin to stitch along the hem at the selvage, or if the end of the hem is oversewed, begin an inch from the edge and stitch the hem toward the selvage; then lift the presser-foot so as to turn the work, retrace the bit of stitching, and continue across the whole hem. When the end is reached, release the presser-foot, turn the work, and stitch back for an inch or more in the same line, as was done at the beginning of the hem. By this method the threads are fastened much more easily and quickly than by drawing them through on the wrong side and tying or sewing them by hand; and of course it is much more satisfactory than cutting them off short. Tucks in fine goods may be fastened in the same way. If fine thread is used, the double stitching at the end is hardly noticeable.

When stitching a seam having one bias and one straight side, let the bias come on the under side. This is especially important in thin material. If the material is very sheer, strips of newspaper should be sewed into the seam. This will insure a seam free from puckers, and when finished the paper may be pulled away easily. In sewing gathers on a band, they should come next the feed, as the side next to this is taken up a little faster than the upper side. When the bias side of a seam or the gathers are next to the feed, the material runs along smoothly; but if the straight side is toward it there is apt to be a pucker. All seams should be stretched to the full extent of their straight edge in stitching as the work passes under the presser-foot.

Much work should be accomplished this year, for the sewing is to be done mostly on the machine. Each girl is

to prepare for herself a set of bed clothing and towels. This set includes:

2 nightdresses.	1 comforter.
2 sheets.	1 mosquito net.
2 pillowcases.	3 towels.

The estimated cost of the set is about ₱12; but this will depend, of course, upon the quality of the material employed.

The girls must understand why each of these articles is necessary. They should be made to realize that their first duty is to keep well; that we sleep for a purpose; and that no one can be well and strong without plenty of refreshing sleep under the right conditions.

Mosquito nets prevent malaria.

Individual towels prevent the spreading of various diseases, especially of the skin.

A comforter prevents much sickness. Many people suffer from various intestinal troubles, rheumatism, colds, and even tuberculosis, because they sleep without sufficient covering.

Nightdresses also prevent sickness; day clothes become dusty and damp with perspiration, and if left on the body during sleeping hours will inevitably produce illness of some sort.

The comforter and pillow can not be washed conveniently, and unless protected by sheet and pillowcase become too dirty to be healthful.

The money necessary for the materials needed in this year's work in sewing is to be obtained from commercial work of various kinds, any of which may be done in the sewing period. The girls should be able to make under-clothes very neatly, and these always find a ready sale. Patching, darning, hemstitching, and the making of pillows bring in a good sum with very little expenditure.

An entertainment and dinner will prove a financial success if properly managed. Preserves and pickles find a

ready market, as does almost anything the girls care to cook and sell. It is presumed that in most schools each girl will be ready and willing to furnish outright at least a part of the material employed for her own work.

The girls should be encouraged to do considerable sewing at home this year. They need not necessarily do all this work themselves; the whole family may help. More time will need to be spent in earning money with which the materials are to be bought than is allowed for the making of the finished article. The object is to encourage the girls to earn for themselves the things which they need in their homes as well as to learn why they should be used and how to use them.

#### COOKING.

##### REVIEW AND GENERAL OBSERVATIONS.

Review the work of the previous years. Plan and cook simple meals. Emphasize the necessity of wholesome every-day living, and discourage the custom of alternate feasting and fasting.

It is impossible to say how much money should be spent for food every day; but with a small income more than twice as much should be spent for food as for clothing. A person can live and keep well and strong on a peseta a day, and for thirty centavos he can live very comfortably if he knows what food to buy and how to prepare it to the best advantage. Many people live on less than this; but it is foolish to spend on clothes or jewelry money that is needed to buy nourishing food. We must be well-nourished if we are to have health, long life, and ability to work and do our part toward the advancement of civilization.

Review carefully the work on food values taken in Grade VI, and make practical menus, estimating the cost. Be sure that all the elements find their place in these menus and emphasize the necessity of variety, decent serving, regular meal hours, and thorough mastication of the food.

*A wholesome menu for one person one week.*

	Cost.	Breakfast.	Lunch.	Dinner.
Monday--	P 0.24-0.37	Coffee with milk and sugar; hot pan de sal.	Mongos stewed with pork; rice; tomato salad.	Chopped pork cakes; sweet potatoes roasted in the ashes; fried bananas, sliced oranges with sugar.
Tuesday--	0.25-0.37	2 boiled eggs; bread; chocolate; fruit.	Toasted dried fish; tomato sauce; rice; boiled squash.	Roast pork; mashed camotes; pomelo salad.
Wednesday.	0.28-0.30	Rice and milk with sliced bananas and sugar.	Pork stew with vegetables; rice; coconut-guláman jelly.	Fried fish; tomatoes and rice cooked together; roast corn.
Thursday--	0.26-0.35	Hot bread; guava jelly; chocolate.	Stewed mixed vegetables with ba-goong; rice.	Pork chop; mashed ubi; stewed beans; sliced pineapple and sugar.
Friday-----	0.28-0.35	Omelet; rice; fruit; coffee.	Roast corn; sweet potatoes; boiled fish with egg sauce.	Shrimp and amar-goso with rice; bamboo salad; sago pudding.
Saturday--	0.24-0.30	Fried corn mush; eggs; coffee; orange.	Pork and mongos; rice; papaya salad and pineapple salad.	Salmon and rice.
Sunday----	0.25-0.35	Rice; boiled eggs; coffee.	Fried liver; green beans; rice; fruit.	Cold boiled fish with shredded raw onion, vinegar, salt and oil; rice; egg-plant fried.

NOTE.—The menus given here have actually been worked out in one province of these Islands at the cost first given; but the second cost will probably be in general more accurate.

**CANNING AND PRESERVING FRUITS AND MAKING FRUIT JELLY.**

The canning of fruit is a very simple process. All that is necessary is to sterilize the fruit and everything that comes into contact with it and then to keep the air away from it. That is, the fruit and whatever it touches must

be raised to a sufficient degree of heat to destroy any life already there that would cause change of form or decay. This being done, care must be taken that no other germs be allowed to enter through the air.

It has been proved by repeated experiments that longer cooking is necessary with the fruits here than with those in the States. Gentle cooking long continued kills the bacteria and preserves the appearance of the first fruit better than intense heat for a short time. The fireless cooker is ideally adapted to this sort of work.

All the fruit used must be carefully picked over and washed. Very green fruit and overripe fruit do not make good jelly, because they do not contain the jelly-making material found in fruit in the first stage of ripeness. Jelly should not be stirred more than is necessary to have it clear and to prevent granulation of the sugar; but preserves, on account of their tendency to settle and burn, must be stirred frequently.

Be sure that the jars used in canning are tight; test each one by pouring water into it and turning it upside down. Do not use a jar from which a drop of water oozes. The best jars are those with glass cover, fastening with a spring. The less lettering there is on a jar the surer we may be of keeping it clean. Use agate kettles, wooden or coconut-shell spoons, and cloth strainers. The using of metal utensils makes a decided change in the flavor of the fruit.

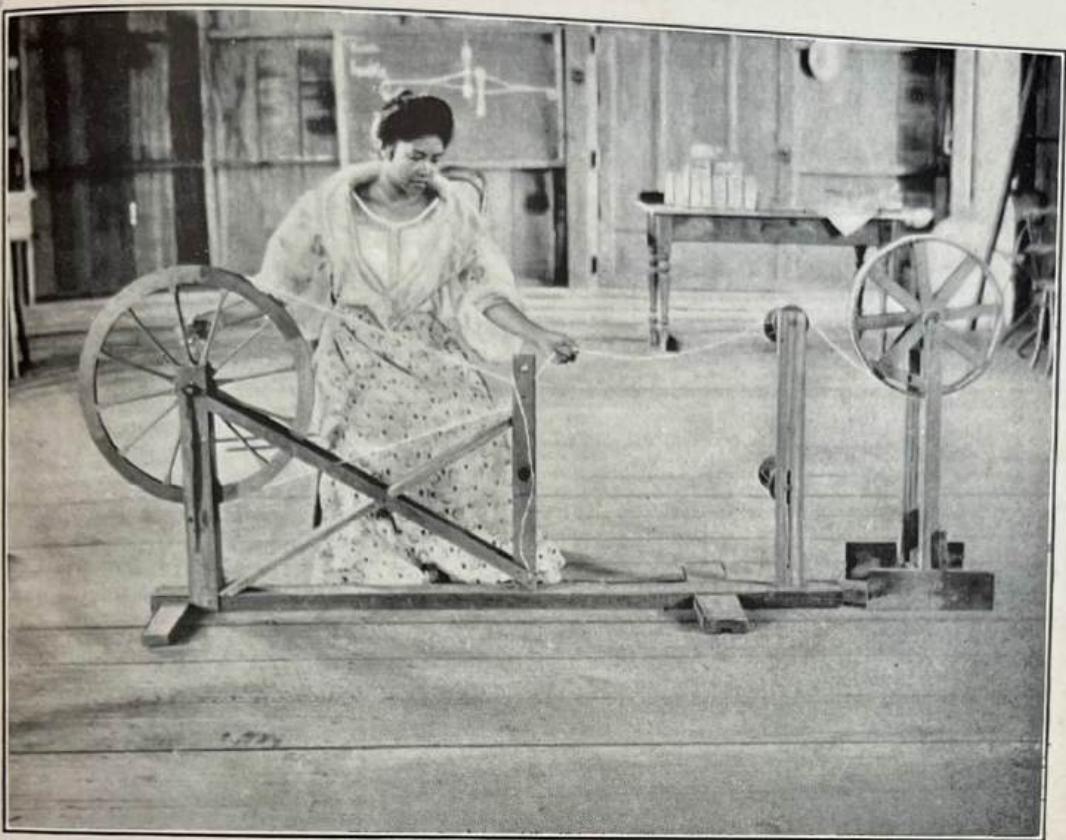
One of the secrets of having fruit-juice turn to jelly quickly is to spread the sugar upon a platter and heat it before adding it to the boiling juice.

#### RECIPES.

##### Búgnay jelly.

Use the red búgnay; remove stems and wash carefully. Cover with cold water and cook over a slow fire until soft. When soft, strain through a sinamay bag; but do not squeeze or the jelly will be clouded. To every cupful of juice allow one cupful of white sugar. Put the juice into a kettle and bring quickly to a boil; add the hot sugar, stirring until it is dissolved; then boil continuously until it jellies, skimming off the scum as it comes to the surface.

After boiling fifteen minutes, take out a teaspoonful of the boiling



SPINNING.



WEAVING.

PLATE XV.

jelly, pour it into a saucer, and fan it for a moment; then test it with a spoon. If it is jellied, it will be partly solid; if not, boil a few minutes longer and try again.

Have ready some large-necked bottles (pickle and salt bottles are very convenient) that have been put into a kettle of cold water placed over the fire and brought to a boil. Fill these while hot with the boiling liquid. Set aside until cool and firm, then cover with two thicknesses of tissue paper, pasting the edges down carefully; moisten the top of the paper with a cloth dipped into cold water. Keep in a cool, dark place.

#### Dúhat jelly.

Four cupfuls of dúhat juice, four cupfuls of white sugar, two teaspoonfuls of lemon juice. Select the fruit before it is perfectly ripe. Sort and wash. Add just enough water to barely cover the fruit, and cook until it becomes soft and the juice is well started. Strain off the juice; let it drain through a sinamay bag eight or ten hours. Do not squeeze the bag, or the jelly will be cloudy. Measure the juice and use an equal amount of sugar. Place the juice on the fire and boil thirty minutes; add the sugar and lemon juice. Stir until the sugar is thoroughly dissolved, and let boil for ten minutes more. Test for jelly. As soon as it will jelly, pour into glasses; after twenty-four hours seal with paraffin. The time of boiling, between ten and thirty minutes, will depend upon the ripeness of the fruit. Overcooked juice will not jelly.

#### Guava jelly.

Pare and quarter ripe guavas and drop them into just enough cold water to cover them. Put the parings into another kettle and cover them with cold water. Boil separately until the fruit is thoroughly cooked. Drain off the juice from both through a sinamay bag several hours. Do not squeeze the bag, or the jelly will be clouded. Put the juice into the kettle and bring to a boil; add white sugar, cup for cup. Let this juice cook slowly until the jelly is clear; add lemon or lime juice to taste—about a teaspoonful to a cupful of the guava juice. As soon as it jellies, pour into wide-mouthed bottles. Seal when cold.

The fruit itself may be sweetened to taste and used as jam.

#### Macupa jelly.

Wipe the fruit, and cut it into quarters without paring. Remove the seed. Put the fruit into a kettle, and barely cover with cold water. Cover the kettle and boil slowly until the fruit is very tender. Drain through a sinamay bag and do not squeeze, or the jelly will be cloudy. To every cup of juice allow a cup of white sugar. Put the juice into a porcelain-lined kettle, bring quickly to a boil, add the sugar, and stir until it is dissolved; then boil rapidly and continuously until it jellies (twenty minutes is the usual time). Proceed and finish the same as with the other jellies.

**Preserved mangoes.**

Five cups of sliced mangoes, four cups of sugar, one cup of water. Peel the mangoes and cut them into strips lengthwise. Remove the seed. Boil the sugar and water together until they thread. Drop in the mangoes and cook gently for forty minutes. Then can. One teaspoonful each of cinnamon, clove, nutmeg, and allspice may be tied together in a thin cotton bag and dropped into the boiling sirup with the mangoes.

**Mango butter.**

Grate peeled ripe mangoes and pass them through a sieve. Use equal parts of sugar and mangoes, using half white and half native brown sugar. Boil for three hours.

**Camias preserves.**

Bruise the fruit until soft and squeeze out the juice. Make a sirup with two cupfuls of white sugar and one cupful of water. When boiling drop in the fruit and cook until tender, or if preferred, until the sugar grains and the fruit is quite dry.

**Preserved pineapples.**

Pare and slice the pineapple and just cover it with cold water. Boil gently until it is tender and clear; then take out the fruit and add to the boiling juice an equal quantity of white sugar. Stir until the sugar dissolves and the sirup boils. Return the pineapple and let it cook gently until it becomes transparent. Take out the fruit, cool it, and put it into a glass jar. Let the sirup cook until it is thick and rich; when nearly cool pour it over the fruit, and the next day seal up the jars. The pineapple may be put directly into the sirup without first boiling the water, but if prepared in that way, it is tougher and not so good.

**Pineapple jam.**

This is made in much the same way as pineapple preserves. First chop the pineapple, cook it in water until tender, and then add three-fourths cup of sugar to each cup of fruit.

**Tomato preserves.**

Select small smooth tomatoes; scald and skin them. Allow three-fourths of a kilo of sugar to each two kilos of tomatoes. Let them cook very slowly in the sugar until they are clear. Add no water. When they have boiled forty minutes take them from the sirup and put them in the sunshine, laying one by one upon a platter, so that they will not touch each other. Cook the sirup down until it is very thick. While the tomatoes are drying, sprinkle a little sirup over them. The drying is a matter of several sunny days. Do not let the dew fall on them. Guard also against dust, ants, and flies. When dry, pack with sugar in large-mouthed bottles.

**Tomatoes canned whole.**

Select firm, ripe tomatoes. Dip them into boiling water and skin them. Have ready a large kettle of boiling water; into this put enough tomatoes to fill one jar. Cover the kettle and allow the tomatoes to remain ten minutes. Pack into a hot jar, fill up with boiling water, and seal at once. If the jar is perfectly tight, they will keep well and will taste almost like fresh tomatoes.

**Tomato catsup.**

Peel and cut up some tomatoes and onions, allowing one onion to six large ripe tomatoes. Cook one-half hour and strain. Measure and return the tomato sauce to the fire. For each four cupfuls of sauce mix in a dish one cupful of sugar, one cupful of vinegar, one teaspoonful of salt, one of pepper, one of cloves, and one of cinnamon. Pour this into the boiling tomato sauce. Boil fifteen minutes longer, then take it from the fire and set it aside to cool. When cold, strain and put it into small bottles, filling them to the very top. Cork tightly and cover the tops with paraffin.

**Papaya pickle.**

One cup of vinegar, one spoonful of salt and a little pepper, one large green papaya, one small onion, one garlic, two inches of green ginger root, one-half teaspoonful of azafrán (Visayan, *kalawag*). Shred the papaya and chop the onion and garlic fine. Grate the *kalawag*, and put it into the vinegar. Add the salt and pepper and bring to a boil. When the vinegar is boiling, stir in the other ingredients and boil two minutes. Remove from the fire, cover tightly, and leave covered until it is cold. This keeps indefinitely while bottled.

**Green tomato pickle.**

Eight liters of green tomatoes; one-half kilo of native onion; two garlices; four green papayas; one good-sized green ginger root; six peppers; one tablespoonful of allspice, clove and cinnamon mixed; one-half teaspoonful of black pepper; two liters of vinegar; and one-half kilo of native brown sugar. Cut the tomatoes and peppers into thin slices, sprinkle generously with salt, and let them stand over night. In the morning drain and wash off the salt. Shred the papaya and ginger. Put the sugar and spice into the vinegar, add the ginger, and pour this over the tomatoes and peppers. Cook slowly for an hour, then stir in the papaya, and boil until sufficiently cooked. When cold, bottle and seal. This is better than standing for some time.

**Sweet green tomato pickle.**

Slice 8 liters of green tomatoes and two liters of onions. Sprinkle over them a large cupful of salt. Let them stand over night in the brine. In the morning drain well and put into cold water for a few

minutes. Pour this water off and add enough vinegar to cover them. Add one kilo of brown sugar, one-eighth of a kilo of mustard seed, and two tablespoonfuls each of allspice, whole cloves, and cinnamon. Cook all together until the pickles are tender. Put into jars and seal.

#### Pickled onions.

Make a brine strong enough to float an egg. Bring it to a boil and pour it over some native onions that have been peeled and washed. Let them stand twenty-four hours; then drain and cover with hot vinegar spiced to taste.

#### Condol preserves.

Pare and cut a condol into the desired shape and size (usually into strips 1 centimeter thick and six to eight centimeters long). Sprinkle generously with salt and cover with cold water and let stand over night (this water should be a strong brine). In the morning drain and cover with fresh water. Soak two hours, changing the water twice. Dissolve a teaspoonful of powdered alum in two liters of boiling water. Add the condol and bring to a boil. Drain. Make a sirup of two and one-eighth kilos of white sugar and a liter of boiling water. Boil and skim. When clear put in the condol and cook gently until you can pierce it with a straw. When tender lay the pieces on a plate and put them in the sun two hours to harden. Add to the sirup the juice of two large lemons and an inch of grated ginger root. Boil gently for ten minutes and set aside until wanted. When the condol has hardened, put it into a deep dish and pour over it the sirup.

#### Coconut dulee.

To the grated meat of a coconut, add half a kilo of dark native sugar and cook until it is a thick preserve.

#### Coconut sirup.

Two cupfuls coconut milk; one kilo caramel. Boil to the consistency of honey. Bottle.

#### Ginger squash.

Twelve cups squash, three-fourths cup green ginger root, ten cups sugar, six American lemons (juice and grated rind). Peel and cut the squash into small thin pieces. Mix all together in a kettle. Cover and let stand twelve hours. Place on fire and boil twenty minutes; then place in fireless cooker for twelve to twenty-four hours as convenient. Bring again to a boil allowing it to cook uncovered for about ten minutes. Can.

#### Tamarind marmalade.

Shell one-half liter of ripe tamarinds. Cover with boiling water and boil one hour. Pass through a sieve. To every cupful of tamarind pulp add three of white sugar; then boil an hour. This is to be served with roast meats.



PLATE XVI.—VEGETABLE GARDENS—THE SOURCE OF A VARIETY OF  
GOOD WHOLESOME FOODS.

### Watermelon pickles.

Ten cups of watermelon rind, eight cups sugar, one American lemon shredded. Cut the rind of the melon into 5-centimeter lengths, carefully peeling off the hard green portion. Place alternating layers of melon and sugar in the kettle. Cover and let stand 8 to 12 hours. Place on the fire and let boil slowly for twenty minutes. Leave in a fireless cooker twelve to twenty-four hours. Reheat and when it comes to a boil add the shredded lemon and allow it to boil from twenty to thirty minutes; that is, until the rind becomes a clear amber color. Can.

### HYGIENE.

Review carefully all the work of the previous years and teach the girls to value health above everything. Teach the structure of the body, the digestion of food, and nutrition.

Health is the natural condition of the body; and if people are sick, it is because they have in some way broken the laws which govern health. Wholesome food, good light, and good beds in clean airy places make bodies strong to resist disease and give power to work and to enjoy life. These things are therefore more valuable than fine clothes or jewels.

The girls must see that the conditions about their homes are as nearly perfect as they know how to make them. Each should feel a personal responsibility for the health of the family. Try to influence the girls in regard to superstitious customs in cases of sickness. Help them to think and to reason and to seek scientific help when cases are beyond ordinary care.

Teach them what is meant by public health, what the Board of Health is, what its duties are, and the power which it has. Try to make them feel that the Board of Health is working for the greater good, even though at times it may seem cruel and tyrannical.

The officers of the board of health and the power which they possess exist by the consent of those highest in authority, who desire, and therefore provide for, the protection of the public at large. This sometimes necessitates the giving up of some personal rights and privileges; but intelligent people will always accept and comply with what is best for the community as a whole.

We do not want our loved ones exposed to cholera, small-pox, or leprosy; so we must do our utmost to suppress these dread diseases. All contagious and infectious diseases are preventable. So far as is known each case comes from some other case, near or far, so that epidemics are due to carelessness or ignorance on the part of those who are sick or of those who care for the sick. Lack of precaution on the part of those who take the disease is also frequently to blame.

The officers of the board of health have a right to vaccinate, to quarantine and isolate, and to enter and search any house where they have reason to believe there is anything which is a menace to public health. It is true that they sometimes cause great inconvenience and expense; but it is better for a few to be thus annoyed than for many to suffer from disease. The teacher should try to overcome the dread of isolation and the feeling of resentment which many people manifest when their home is quarantined.

Make the girls understand that those who are taken away from their homes on account of disease are going to receive the best of care and that they will be treated kindly and will be given many comforts. Within the past few years we have acquired much scientific knowledge of contagious diseases and the means of keeping them in check, so that to-day pests and epidemics are far less common and fatal than ever before and should be less dreaded than formerly.

Girls who are educated have a duty to perform in helping others who are not so fortunate; they should be able to convince their family and friends of the necessity of following the instructions laid down by the Board of Health.

Every intelligent citizen may do much to protect the public health, but this is a work especially adapted to progressive Filipino women. Each must remember that she and her family, her house and all its contents, have an important influence upon the health of the community. She must try to maintain good health in her household, for the prevention of disease and death is a genuine con-

tribution to the public health. She must cheerfully conform to all regulations of the sanitary authorities; and if she sees anything to criticize, she should help them by calling their attention to it. She should aid in their good work by reporting cases of infectious diseases or nuisances and by explaining the work to others and loyally supporting officers who are doing their duty.

A club of earnest, intelligent women may do much to protect and promote health in their town or barrio. If they work together with the Board of Health, they may insist that the public water supply be kept pure. If the water is taken from the river, they should insist that the banks of the river ought not to be used as a dumping ground for the filth and waste of the town; that dead animals and filth should not be thrown into the river; and that washing should be done below where the drinking water is taken.

They should see to it that the milk sold is clean and pure and put up in really clean bottles; that the public market is kept clean; that the food is screened and not allowed to be handled; and that spitting in the church, in the market, and in other public places is absolutely prohibited. They should report contagious diseases, and be sure that all the people in their community are vaccinated against small-pox. They should urge people to have fresh air in the sleeping-rooms. They should interest housekeepers in securing better food, and in clothing the little children properly. Such a club will find many ways to improve the general health of the community.

#### ETHICS.

Read aloud, and talk over with the class, extracts from some standard book of etiquette, and continue the personal talks on manners and morals as occasion suggests. Have the girls keep notebooks.

Have practice in letter writing—both letters of friendship and letters of business.

Insist that the girls use proper table manners and observe the common courtesies while in school.

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## **APPENDIX A.**

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## APPENDIX A.

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### EQUIPMENT FOR INTERMEDIATE SCHOOL.

#### KITCHEN.

3 large tables with two drawers each.

(4 girls work at each table, allowing about 1 square meter to each girl.)

1 cupboard with lock (for supplies).

1 teacher's desk or table with four drawers.

(These drawers for caps, aprons, table cloths, towels, etc.)

1 set corner shelves.

1 low, broad shelf for wash basins, soap, nailbrush, etc.

It is suggested that cupboards, shelves, and work tables be painted white and that the walls and ceiling of the kitchen be whitewashed or painted white.

1 dining table.

14 chairs or stools.

All these things may be made by the boys in the trade school.

#### FOR 12 GIRLS.

12 fire places.

12 small clay ovens (abbibincans).

1 saw.

1 hammer.

1 hatchet.

1 bolo.

1 dozen hand towels.

1 piece white crape for dishcloths, dusters, etc.

9 meters tablecloth.

2 dozen napkins.

12 plates.

1 butcher knife.

1 dozen teaspoons.

2 dozen tablespoons.

1 dozen knives.

6 paring knives.

6 small platters.

6 large platters.

- 12 glasses.  
 12 pint bowls.  
 12 cups and saucers.  
 12 one-liter mixing bowls.  
 12 stewpans.  
 12 small frying pans.  
 12 measuring cups.  
 2 big wash pans.  
 1 big agate kettle.  
 1 big teakettle.  
 1 big iron frying pan.  
 6 agate washbasins for dish pans.  
 6 agate washbasins for receiving pans.  
 12 glass jars.  
 2 tinajas.  
 1 olla.  
 1 scale for weighing.  
 1 sewing machine, foot or hand.  
 1 large mirror.  
 12 meters white oilcloth.

A resourceful teacher can accomplish much with this limited equipment.

Many makeshifts suggest themselves as the work progresses; for example:

Various baskets may be used as strainers.

A flat tin through which a nail has been driven many times makes a grater.

A piece of tin cut to convenient shape makes a good hotcake turner.

Sifters and jelly bags may be made of sinamay.

Bamboo egg whisks.

Bottle or bamboo rolling pins.

Coconut shell spoons and scoops.

Butter and cream tins for individual baking tins.

Rectangular and circular cocoa boxes for cooky cutters; and baking powder boxes for biscuit cutters.

Salt and pickle bottles for jelly.

Petroleum cans with board covers make good garbage cans.

Baking tins to fit ovens and ant-proof tins for sugar and flour may be made by a native tinsmith.

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## **APPENDIX B.**

## APPENDIX B.

### GLOSSARY OF NATIVE AND OTHER NAMES AND PHRASES USED IN THIS PUBLICATION.

*Abacá* (*Musa textilis* Neé). Filipino name for the plant from which abacá (commercially known as "Manila hemp") fiber is extracted.

*Amargóso* (*Momordica balsamina* L.). Spanish-Filipino name. The rough elongated fruit is very bitter and is borne on a slender herbaceous vine. Also called "ampaláya," "ampaléa," "apaláya," "margóso," and "pálla" in Tagalog; "apália" in Pampangan; and "palía" and "sampalía" in Visayan.

*Ampaláya.* Same as "amargóso."

*Antíng-antíng.* A sort of charm or amulet worn by certain people in the belief that it renders them immune to danger, especially to the weapons of an enemy.

*Aswáng.* Tagalog name for an imaginary being variously described, but usually thought of as having wings and the habit of entering the house while the inmates are asleep and sucking their blood, leaving them lifeless. Compare the English word "vampire."

*Azafrán* (*Carthamus tinctorius* L.). This word is the Spanish equivalent for "saffron;" Tagalog "kasubhá." It is an herb with orange-red flowers, commonly cultivated, the flower being used as a condiment to color foods. Also called "casabhá," "catsúmba," "castúmba," "bíri," and "lágó."

*Bagóong.* An article of food very common in all parts of the Islands. It is made of small fish such as sardines, silversides, and anchovies; of shellfish such as oysters and small shrimp; of the roe of fish, particularly of the mullets; and of fish entrails. The material is first mixed with a generous amount of salt and then left for some days to ferment, after which it is worked with the hands and sometimes ground fine. Coloring matter is usually added. Similar to, if not identical with, the "ginamos" of the Visayans.

*Bayábas* (*Psidium guayava* L.). Tagalog and Visayan name for the guava. Also called "arráyan," "calinbagín," and "tayábas." Spanish, "guayába."

*Brúja.* Spanish for "witch."

*Búlak.* Same as "kapok" (which see), although the term is also applied to ordinary cotton.

*Búgnay* (*Antidesma bunius* Spreng, and other species). Visayan and Ilocano name for a small spherical edible fruit having a pleasant acid taste. Called "bígnay," in Pampanga and "bunnay" in Ibánag.

*Calamísmis* (*Psophocarpus tetragonolobus* DC.). Tagalog name for a cultivated twining bean from a large tuberous root. Pods square, winged, and 6 inches or more long. Also called "cama-luson" and "balágay" in Visayan; "pal-lám" and "palláng" in Ilocano; "siriguillas" and "sigarillas" in Tagalog; and "sigadillas" in Manila. English, "asparagus bean."

*Caláwag* (*Curcuma longa* Linn.). Visayan name for a near relative of the ginger plant and called "turmeric" in English. Forms the basis for curry powder and is also used in dyeing yellow. Generally called "diláo" throughout the Islands, "lúyang diláo" in Tagalog, "cúnig" in Ilocano and "ángay" and "pángas" in Pampangan.

*Camías* (*Averrhoa bilimbi* L.). Tagalog name for a tree, cultivated for its edible acid fruits, which have rounded lobes. Also called "calamías," and "colonáuas" in Tagalog; "cíliñg-iwa," "iba," and "kiliñg-iwa" in Visayan; "piás" in Ilocano; and "taranáte" in Pampangan.

*Camóte* (*Ipomoea batatas* L.). Spanish-Filipino name for the sweet potato.

*Canéla* (*Cinnamomum zeylanicum*). Cinnamon. There are many different species in the Philippines. The leaves are sometimes erroneously called "laurél" (which see). The word "canéla" has special reference to the bark.

*Caramelo.* A light brown candy, or rather sugar cake, sold everywhere in the Philippines. Made out of brown sugar, white of egg, and other minor ingredients.

*Cinnamon.* See "canéla."

*Condól* (*Benincasa cerifera* Savi.). Tagalog and Visayan name for a climbing herbaceous vine, the fruit of which is used in making sweets. Also called "candól," "malínga," "tibiáyon," "tañgkóy," and "tangkúa." The white gourd melon.

*Dúhat* (*Eugenia jambolana* Lam.). Tagalog, Visayan, and Pampangan name for a tree bearing edible fruit. Also sometimes called "dúat," "lombóy," and "lumbói."

*Endive* (*Cichorium endivia*). A cultivated herb related to chicory. Its finely divided and much curled leaves, when blanched, are used for salads. A relative of lettuce.

*Flan.* Spanish name for custard.

*Gábi* (*Colocasia antiquorum* Schott). Tagalog, Visayan, Pampangan, and Cagayan name for a tall coarse herb with an edible tuberous root. Identical with the "poi" plant of the Hawaiian Islands. Many species and very variable. Also called "abálong," "apípi," "badiang," "dagmáy," "gávay," "gandus," "galiang," "lagváy," etc. English "taro."

*Ginger.* See "lúya" and "layá."

*Guáva.* See "bayábas."

*Guláman.* Spanish, alga gelatinosa. A kind of seaweed, used in medicine as a pectoral and antidiysenteric remedy. Also used in making agar cultures and jellies. Seaweed gelatin.

*Guláy.* Native word applied to all kinds of "greens."

*Ilang-ilang.* See "Ylang-ylang."

*Is-ís* (*Ficus sinuosa* Miq.). Tagalog and Visayan name for a shrub with harsh sandpaper-like leaves, which are used for cleaning dishes, furniture, etc. Called "alásas" in Pampangan. Also called "ásis."

*Kápok* (*Ceiba pentandra* Gaertn.). A very common tree with soft white wood, straight smooth trunk, and few branches extending at right angles from the trunk. Bears many pods containing an abundance of cotton-like fiber used for stuffing pillows, mattresses, etc. Also called "búlak," "dóldol," "bóboy," "cáyo," and "cápasañglay." Often called the "cotton tree."

*Katúray* (*Sesbania grandiflora* Pers.). Tagalog name for a small tree belonging to the acacias and having large white flowers and slender pods a foot in length. The flowers are edible and are used for making a salad. Visayan name, "gáway-gáway."

*Layá.* See "lúya."

*Laurél.* A name applied to certain cured leaves to be purchased at the Chinese tiendas and used as a condiment in cooking fish, meats, etc. The leaves of cinnamon (which see) are also often called "laurél."

*Lime* (*Citrus acida* Roxb.). A small globe-shaped greenish-yellow fruit borne on a tree resembling the lemon tree. The fruit closely resembles the lemon and the juice is extensively used for making lemonade and for mixing with tea, foods, etc. Various forms are called "calamondín," "limoncito," "daláyap," "dáyap," "búyag," and "calamansi." ("Calamansi" is also a Tagalog name for a variety of orange.)

*Lukban* (*Citrus decumana* Linn.). Tagalog name for the Philippine pomelo. Visayan name, "cabúgao." Also calle "suhá" in Tagalog. Member of the orange family.

*Luya* (*Zingiber officinale* Rosc. and other species). Tagalog name for ginger. Also called "báseng," "layál," "páñgas," "layá," "bangbáy," "lampúyan," and "mangláy."

*Macupa* (*Eugenia jambos* L.). Tagalog name for an edible fruit closely related to the "duhat" (which see). Also called "balácbas," "balóbar," "barábog," "barábac," "mansána-rósá," "tam-pói," "yámbo," "yambolín," and "yambósa."

*Mango* (*Mangifera indica* L.). Tree common in all parts of the Philippines. The "manga."

*Mildew.* Popularly, any whitish or spotted discoloration caused by parasitic fungi on vegetable matter or on manufactured substances, such as leather, cloth, etc. In this sense, it is not clearly distinguished from *mold*. In rainy weather, mildew forms very readily on soiled clothing, shoes, bookbindings, etc. Tagalog name, "ámag;" Visayan, "tagiptípt;" Ilocano, "bo-ót;" Cebuano, "agópop."

*Mint.* Any plant belonging to the mint family. Most of these plants are aromatic and owe this property to certain essential oils. Leaves used for flavoring, condiments, etc. *Ocimum basilicum* L., a strongly scented herb with pink or purplish flowers, is one of the commonest forms in the Philippines. Native names: "bonác," "calóoy," "canéla" (not cinnamon), "solási," and "sulási." "Yerba buena" is the true mint (*mentha*).

*Móngos* (*Phaseolus radiatus* L.). Tagalog and Visayan name for the green "gram," a kind of bean. The beans are borne in cylindrical legumes on a low bushy herbaceous cultivated plant and look like small peas. Extensively used for food. Also called "balátong" in Batangas and Ilocano.

*Mustard* (*Brassica juncea* H. f. and Th.). Commonly known in the Philippines by the Spanish name "mostaza."

*Nanca* (*Artocarpus integrifolia* L. f.). A tree with small ovate entire leaves, fruit being borne on the trunk and sides of the larger branches. The "jak-fruit" (erroneously spelled "jack-fruit"). Also called "lánca," "láñca," and nañga. Related to the "camánsi" (*Artocarpus camansi* Blanco).

*Nipa* (*Nipa fruticans* L. and Wurmb.). A species of palm which grows along estuaries and in salt marshes. Leaves extensively used for thatching houses. Juice from flower spathe called "tubá." Other names "lása," "ságá," "sasá," "táta."

*Okra* (*Abelmoschus esculentus*). A tall annual of African origin, widely cultivated for its mucilaginous green pods used as the basis for soups, stews, etc., or made into pickles. Gumbo.

*Paco* (*Athyrium esculentum* Copel.). Tagalog name for a polypodiaceous fern (spleen-wort), the young stems and leaves of which are much used for food by the Filipinos.

*Pan de caña.* Hot buns or hot bread cut into slices and rebaked. Differs from toast in that it is baked within an oven instead of being toasted over a fire.

*Pan de sal.* A small oval-shaped loaf of bread very common in the Philippines. Prepared much the same as ordinary bread, but baked much harder. The loaf, when baked, is 9 to 15 centimeters long, 7 to 9 centimeters wide, and about 4 to 6 centimeters thick. Prior to baking, the loaf is gashed longitudinally on top so that the baked loaf may be easily broken into halves.

*Panocha.* A cake of unrefined brown cane sugar, made by pouring the thick sirup into a half coconut shell and letting it harden.

*Papáya* (*Carica papaya* L.). Spanish-Filipino name for the true pawpaw. Also called "capáyas."

*Patáni* (*Phaseolus lunatus* Linn.). Tagalog, Visayan, and Ilocano name for a form of the Lima bean. Also called "hába" and "zabbaché."

*Patóla* (*Luffa cylindrica* Roem. and other species). Tagalog and Visayan name for the "vegetable sponge." Cultivated for its edible fruits, which are sometimes called "dishcloth gourds," or "towel gourds." Ilocano name, "kabitíti;" Pangasinan, "tabóngas;" Pampangan, "tabongao."

*Péchay* (*Brassica oleracea*). A plant commonly cultivated by the Chinese as a pot herb.

*Peppers.* English name for various species of the genus *Piper*. Spanish, "pimienta." The varieties referred to in this text are generally the green peppers.

*Petate.* Spanish-American name for a sleeping mat, such as is used in the Philippines. The most common native name is "baníg."

*Piña* (*Ananassa sativa* Lindl.). Spanish-Filipino name for the pineapple. Cultivated for its fiber and its edible fruit. Other names, "malísá" and "pítá."

*Pómelo.* English name (perhaps of East Indian origin) for the "lukban" (which see).

*Sabá* (*Musa sapientum* L. var.). Tagalog and Visayan name for a variety of cooking banana which yields a fiber capable of being woven into textiles. Called "díppig" in Ilocano.

*Sámpaguítá* (*Jasminum sambac* Ait.). The Philippine jasmine. Commonly cultivated for ornament. The flowers have a strong sweet odor. Other names: "capópat," "campópot," "culátai," "húbar," "manúl," "poúgso," "sámpága," and "sampágang."

*Shrimp.* A small marine crustacean, having three pairs of small pinching claws and no large ones. The so-called shrimp of the Philippines is really a prawn. Called "camarón" in Spanish; "pasayan" in Visayan and Ilocano; and "hípon" in Tagalog.

*Sincamás* (*Pachyrhizus erosus* Urb.). Tagalog name for a climbing herbaceous plant, which grows from an edible tuber resembling the turnip both in shape and flavor. Cultivated. Also called "hincamás" and "ticamás."

*Siréna*. Imaginary creatures. Spanish term. Compare the English word "siren." Spanish equivalent of "mermaid."

*Sítao* (*Vigna sinensis* Endl.). Manila name for the "cowpea" of the United States. Cultivated herbaceous vine. Also called "balátong," "hamtác," and "lastón" in Visayan; "kíbal" in Batangas; "útong" in Ilocano; and "páyap" in Cavite and Tayabas.

*Suet*. A hard fat about the kidneys and loins in beef and mutton, which, when melted and freed from the membranes, forms tallow.

*Tálong* (*Solanum melongena* L.). Tagalog and Visayan name for the eggplant. Cultivated. Very common in all parts of the Islands. Spanish "berenjena."

*Tamarind* (*Tamarindus indica* Linn.). English for the Spanish-Filipino "tamarindo." Tree with fine compound leaves. Seeds borne in a pod and embedded in an acid edible pulp. Also called "sampálok," "sambág," "salomágui," "camalágín," and many other similar names.

*Túba-túba* (*Játropha curcas* L.). Native name for the physic nut. A small shrub, introduced from America and commonly cultivated for a hedge plant. The seeds yield a purgative oil. The sap of the stem and leaves stains cloth. Also called "bólóng-cáwit," "caslá," "tatatabá," "táva-táva," and "túbá." These names, with the exception of caslá, are also applied to the croton-oil plant (*Croton tiglium* L.).

*Ubi* (*Dioscorea alata* L. and other species). Native name for a climbing plant with a fleshy rootstock, used for food in much the same manner as the camote, which it resembles to some extent, although not botanically related to it. The ubi root not uncommonly attains to a weight of as much as 4½ kilos. The ubi is a yam.

*Wák-wák*. Visayan name for an imaginary being similar to the "aswáng" of the Tagalogs. See "aswáng."

*Ylang-ylang* (*Canánga odorata* H. and Th.). Tagalog, Visayan, and Ilocano name for a tree very common in the vicinity of towns, the flowers of which yield a valuable perfume. Also called "angilang," "álang-flang."

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## APPENDIX C.

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## APPENDIX C.

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### HOW TO COOK RICE.

(NOTE.—The following recipes and instructions are taken from a pamphlet entitled "Texas and Louisiana Rice," published by the Passenger Industrial Department of the "Sunset Route" and from a pamphlet entitled "Creole Mammy Rice Recipes," published by the Rice Association of America, Crowley, Louisiana.)

The great secret of the proper cooking of rice lies in allowing plenty of water, yet not too much; in not boiling for too long a time; and in not breaking the grains by stirring during the time of boiling. The rice should be washed in three or four changes of water to remove adhering rice flour, dust, etc., and should be boiled only until the grain is well softened; after this the water should be poured off, the vessel tightly closed and the rice allowed to steam.

#### Practical recipe for cooking rice.

One cup of rice (well washed), three cups of boiling water, scant teaspoon of salt, a saltspoon of lard.

Wash rice through at least six waters, or until all cloudiness is removed. Bring to the boiling point three brimful cups of water. Add the salt and the tiny bit of lard. When water is boiling briskly, add the rice from which water has been drained. The boiling process will be interrupted for a few minutes, but counting from the time it starts to boil again, it will take about fifteen minutes for the rice to fully absorb the water. During this time keep the cover on, but slightly pushed to one side. At the end of the fifteen minutes the grains should be soft, not the least gritty and the water absorbed. Remove the cover and at the same heat let dry out for five minutes. If cooking on gas stove, at the end of the five minutes lower gas and let the drying out process continue for twenty to thirty minutes longer. If cooking on a wood or coke stove, at the end of the five minutes place cooked rice on back of stove or in oven to dry out.

By cooking rice in this manner, every bit of nutriment is retained at a minimum cost of effort. Each grain will be puffed to almost three times the size of the uncooked grain. Always cook rice with a lid over the flame. On gas stoves an asbestos lid is recommended. NEVER STIR RICE WHILE COOKING. A sharp knife passed around the side of the pot after the drying process starts is recommended. If lard

is objected to it can be omitted. It is supposed to lessen the danger of burning, to prevent the water boiling over, and lends a brilliancy to the cooked product. A porcelain-lined iron pot is the best for cooking rice, as it lessens the danger of burning. However, the precaution of the lid being used reduces this danger to a minimum.

#### **Boiled rice No. 2.**

Four cupfuls of boiling water, add a teaspoonful of salt. While boiling, add gradually a cup of rice. With a fork lift it once or twice, shaking the kettle, that none of the kernels stick to the bottom. Let boil twenty minutes; remove from the fire; pour off the water, if any, and place on the back of the stove or in the oven, where it will finish swelling without burning. In this way, rice is plump and light and white.

#### **Rice cooked with milk.**

In place of water, use milk, letting it come to a boil before adding the rice. Rice cooked in this way is much richer.

#### **Steamed rice.**

To one pint of washed rice add one pint of water and one-half teaspoon of salt. Place in a covered steamer and cook with live steam for one hour. Stir and take up with a fork to prevent gummy and lumpy appearance. Never stir rice with a spoon.

#### **Jambalaya.**

Cut one pound of pork into pieces an inch square and chop two or three onions fine; add a little red or black pepper. Put a large tablespoonful of sweet lard into a deep saucepan. When lard is hot, add the chopped pork with the onions and pepper and let them brown, stirring; then add about the same amount of chopped ham as you have of pork, and a quarter pound of chopped Vienna sausage, and anything you like to flavor. When all are nicely browned, add two quarts of hot soup stock or hot water. Let it cook about ten minutes; when boiling nicely, add cup of rice. Let boil until rice is tender, stirring frequently to keep from burning. Instead of meat, you may use cooked shrimp, fresh or salt fish (if salt fish, cook before using), cold fowl, roast beef, mutton, liver or any kind of meat.

#### **Creole jambalaya.**

One and one-half cupfuls of rice (well washed), one pound of fresh pork, one pound of sausage, one slice of ham, one-half of red pepper (remove seeds), one large tomato (this is a matter of taste), when in season two or three sweet bell peppers, one large onion (cut fine), one clove of garlic (minced), three sprigs of parsley, one sprig of mint or thyme, two ground cloves, bay or laurel leaf (crushed), one tablespoonful of butter.

Cut pork and ham in very small pieces, the sausage in rather

large slices. All the rest of the ingredients minced. Brown carefully the onion and pork in the butter. When a light brown, add the ham with the other seasonings and brown together for five minutes. Then add the sausage and let cook five minutes longer, stirring constantly. Add three quarts of hot water or preferably stock. Let boil for ten minutes and then add the washed rice and let boil for half an hour or until firm.

This is real jambalaya; but the average housekeeper of the Southern States does not make such an elaborate dish of it, the jambalaya being a method of using the left-overs. It is a favorite way of finishing up the ham scraps with scraps of veal and beef. Chicken, sausage, shrimp, and oysters all make good jambalaya, which is a name for cooking rice in a very rich stew or broth.

#### Gumbo.

Six large crabs, one pound of shrimp (about eighteen or twenty), three dozen okra (sliced fine), one large cup of tomatoes (cut up fine), one large spoonful of lard and flour, one large onion (cut up fine), one-half clove of garlic (minced), three or four sprigs of parsley (minced), two bay leaves, one small sprig of thyme, one red pepper (remove the seeds).

Put lard in large soup pot; and when boiling hot add flour, brown slightly, and then add onion and garlic, then the crabs quartered, then the okra sliced very fine, then the tomatoes, parsley, bay leaves, etc., lastly the shrimp. Let all stew together for at least twenty minutes, stirring constantly to avoid scorching. Add two quarts of hot water and simmer for at least an hour. When done add salt to taste. Serve with a spoonful of boiled rice in each plate. Ample for six or seven people.

Some persons never serve gumbo without ham. If used, cut up a slice fine and fry in lard before the addition of the flour. A pound of veal (cut in small pieces) is also added to the above recipe by many.

Chicken gumbo is made in the same way, substituting for the crab and shrimp a fine, fat chicken, fried previously.

#### Curried shrimp.

Two pounds of shrimp, one tablespoonful of lard, one tablespoonful of flour, one small onion, three sprigs of parsley minced, one bay leaf, one teaspoonful of butter, one tablespoonful of curry. When the lard is boiling hot, sift in the flour and brown slightly. Add the minced onion and brown carefully. Add the peeled shrimp and let fry until a light pink color. Then add two cupfuls of hot water, the curry, parsley, and butter, and let all stew gently for twenty minutes. Serve in a platter banked with hot boiled rice. If curry is not liked, the addition of a cup of tomatoes cut into small pieces and added after the shrimp have fried will make a delicious addition to a shrimp stew. Canned shrimp may be used.

**Fricassee of chicken.**

Cut into joints a fine fat chicken, and season with salt and pepper mixed. Put in a deep iron saucepan a spoonful of lard, and when boiling hot put in the chicken and fry to a light brown. Remove chicken and add a sifted heaping tablespoonful of flour. Stir constantly, and when a light brown add an onion chopped very fine. Brown carefully and then add a tablespoonful of minced parsley, a half clove of garlic minced, and a crushed bay leaf. If tomato is used, add one at this time chopped fine. Return the chicken and let all stew together for ten minutes, adding a teaspoonful of butter if desired. Now add a pint and a half of hot water and let simmer for an hour or until the chicken is tender. Serve with rice.

The addition of half a can of mushrooms and a wine glass of sherry gives a result which is much appreciated by *bons vivants*. Do not add the wine until just before serving.

**Daube.**

In a deep iron saucepan melt a large spoonful of lard. When boiling hot place in it a three or four pound round of veal or beef (preferably veal). Let the meat brown well, taking care not to scorch. When browned remove the meat and sift into the lard a large spoonful of flour. Brown slightly and then add a large onion, cut fine, which brown very carefully, stirring constantly. Then add two large tomatoes cut in small pieces, or a cupful of canned tomatoes, half a clove of garlic minced, the parsley, the butter, bay leaf and the half of a red pepper from which seeds have been removed. Let all stew together, stirring carefully for ten minutes or more, and then add two cupfuls of hot water or stock. Stirring constantly, let it come to a full boil; then return the meat and place at back of stove to simmer for an hour and a half, bearing in mind the old French caution that a "daube boiled is a daube spoiled." If the gravy boils away too fast or becomes too thick, add more water (hot). Serve with boiled rice.

**Rice soup.**

Add a cupful of boiled rice to one quart of heated soup stock. Stir until it comes to a boil, season with pepper, salt and parsley or anything you like.

**Consommé of rice.**

Take canned or home-prepared consomme or stock; heat it and pour over boiled rice No. 2.

**Rice and tomato soup.**

Brown carefully in a saucepan a spoonful of butter and a spoonful of minced onion. When a golden brown, add a quart of tomatoes cut up fine and let stew thoroughly. Pass through a sieve to remove seeds and peeling. Add the tomatoes to two quarts of beef stock. When boiling hard, add a half cupful of well-washed rice and let boil for

fifteen minutes or until rice is soft. Chop up fine or pass through a meat cutter some of the soup meat and add to the soup.

A half cupful of rice well washed, added fifteen or twenty minutes before serving the soup, makes a pleasant change from barley, vermicelli, etc., the usual thickenings employed to vary the soup menu.

Many soups, after serving, can be improved by adding a spoonful or two of hot boiled rice.

#### Rice with vegetables.

Place a soup bone in three quarts of water for one hour. Let it gradually simmer for two hours. One-half cupful each of chopped onion, cabbage, carrot, tomatoes, or any vegetables desired, three cloves, a pinch of cayenne, red or black pepper, and one and one-half teaspoonfuls of salt. Add these to the simmering meat and let boil; then add a cupful of cooked rice. Boil, stirring occasionally. When the kettle is closely covered there is little need of adding water; if it is necessary to use more water, it must be boiling.

#### Rice and tomatoes.

Stew in a pint of water seven or eight large tomatoes with a half pound of bacon, half an onion (cut up), and a teaspoonful of salt, until tomatoes are nearly cooked. Add a pint of rice that has been thoroughly washed and boil or steam until the rice grains are soft. Stir occasionally with a fork to keep tomatoes mixed. Serve either plain or with gravy.

#### Okra pillau.

One quart of okra, one pound of bacon, half an onion. Slice the bacon, cut up the okra and onion as for soup, and fry together until light brown. Then put in a little over one quart of water and add a pint of washed rice. Boil or steam all together until the rice is well done. Stir and take up with a fork.

#### Chicken and rice.

Wash well one-half cupful of rice, and steam it with a cupful and a half of milk; cook until the milk is all absorbed, and the rice soft; add a pinch of salt and white pepper, a tablespoonful of butter and a beaten egg. Mix well, and spread as lining in small custard cups or muffin pans. Have the chicken chopped fine, well seasoned, and wet with gravy or warm milk. Fill the centers of the pans, cover with rice and bake in a pan of boiling water in a moderate oven. They must cook about twenty minutes. Turn out on a platter, garnish with chopped parsley and hard-boiled eggs, and surround with white sauce.

#### Japanese enshi.

A cupful of cooked rice; when boiling add any salt fish; cook until done, turn out on a platter and pour over it a mayonnaise. Any cooked fish will answer in place of salt fish.

**Red beans and rice.**

(A famous Creole combination.)

Soak over night or for at least six hours one-half kilo of red beans. Then simmer for at least four hours in two full liters of water. The beans will then be quite soft; add a teaspoonful of salt, a teaspoonful of butter (or half lard and half butter), a small onion (minced), and half a red pepper, and let the simmering process continue for two hours longer.

One-half kilo of salt meat (scalded) is often substituted for the above seasoning, not excluding the onion. The minced onion entirely disappears in the simmering and makes a delicious seasoning.

Serve with boiled rice, and the combination is not only good but represents a perfect food value—a complete ration.

**Rice egg balls.**

Boil hard five eggs, remove the shells, and put through potato ricer or a sieve, with an equal amount of boiled rice. Season with salt, pepper, and butter. Make into balls and dip into raw egg; then put in crumbs, and fry in deep, hot fat. Drain and place on small pieces of buttered toast, and pour melted butter over the whole.

**Rice omelet.**

Beat separately the whites and yolks of three eggs, add to the yolks one-third cupful of milk, one-half cup of rice, two tablespoonfuls of butter, a little salt and pepper, and lastly the whites. Cook over a gentle fire.

**Fried rice.**

A cupful of cold rice heated in milk or water. While warm stir in two eggs and a piece of butter. Make into small cakes; roll alternately in cracker crumbs and white of eggs or butter; and fry in deep, hot fat.

**Rice and toasted cheese.**

Cut squares of cold boiled rice and fry in butter until a rich brown. Cut cheese into squares about half as large, hold on a fork to the fire, and when softened place quickly on the square of fried rice.

**Fruit croquettes.**

Cupful of boiled rice, half cup of flour, teaspoonful of baking powder; moisten and thoroughly mix with a beaten egg and milk enough to make it as thick as biscuit dough. Grease a plate, and on it put a large spoonful of this mixture, spreading it to a half inch in thickness. Upon this put any fresh fruit, such as sliced apples, peaches, pears, cherries, blueberries, or any kind of cooked fruit; bring over the edges and pinch together. Lift on a ladle and roll alternately in egg and crumbs, then drop in deep, hot fat and fry. Serve with powdered sugar and cream.

#### Rice fritters.

One cupful of boiled rice, one cupful flour, one cupful milk, three eggs, butter half the size of an egg. Place teaspoonful of lard in the skillet, drop into it the mixture, being careful to keep each separate. Turn with a griddle-cake shovel and serve with maple sirup.

#### Rice snowballs.

One cupful of rice, boiled and cooled; whites of three eggs; three spoonfuls of sugar and one teaspoonful of melted butter; mix thoroughly and form into balls. Set upon a flat, low dish, place in the oven and bake without browning about ten minutes. Pour over this the whites of three eggs beaten dry, to which three teaspoonfuls of pulverized sugar and a half teaspoonful of lemon extract are added. Set in a cold oven to just dry and not brown, and serve with whipped cream.

#### Rice gems.

Take a pint of boiled or steamed rice left from dinner and cover with water over night. In the morning add one pint of wheat flour, two eggs and a teaspoonful of butter, salt, yeast powder, and milk enough to make it the consistency of custard. Bake in patty pans.

#### Rice-flour gems.

Separate the white of an egg from the yolk and beat the yolk until light. Then add one cupful of buttermilk or one cupful of sour milk (if sour milk is used, add more butter); stir into the milk a teaspoonful of soda and a half teaspoonful of salt; beat and add one cupful of sifted rice-cake flour; beat until thoroughly incorporated, then fold in the beaten whites of the eggs. Bake in heated gem pans fifteen minutes.

#### Rice-flour bread.

Two cupfuls of buttermilk or sour milk. Stir into this one and one-half teaspoons of soda and a saltspoonful of salt; then add two cupfuls of sifted rice flour and a large teaspoonful of melted butter; beat two minutes and pour into a buttered tin can or pail having a tight cover. Set into boiling water and boil continuously for two hours. Always replenish the kettle with boiling water. This comes out a rich brown loaf.

#### Rice-flour steamed bread.

Into two cupfuls of buttermilk or sour milk stir one and one-half teaspoons of soda, a heaping saltspoonful of salt, and a tablespoonful of sugar. Then add two cupfuls of rice flour, a teaspoonful of melted butter (using more if sour milk is used), and a cupful of washed and dried currants or any other fruit, cherries being preferred. Thoroughly mix and pour into a well-buttered can or pail, which has a tight cover. Set in boiling water and boil continuously for two hours. Add boiling water to the kettle as needed.

**Rice oven bread.**

One-fourth of a pound of rice boiled very soft, three-fourths of a pound of wheat flour, one gill of yeast, one gill of milk, and a little salt. Bake in a pan in a moderate oven.

**Rice-flour muffins.**

One and one-half cupfuls of rice flour, two cupfuls of wheat flour, a little salt, and one and one-half tablespoonfuls of baking powder. Sift these thoroughly together and add one pint of sweet milk, a little butter, and one well-beaten egg. Bake in muffin ring or gem pans.

**Custard pudding.**

Mix together one cupful of cooked rice, four well-beaten eggs, one small cupful of sugar, a pinch of salt and a little grated nutmeg. Add two cupfuls of milk, let it get hot on top of the stove, then bake in a moderate oven till firm. Make a meringue with the whites of two eggs and two tablespoonfuls of white sugar and spread over the top; brown in the oven.

**Rice custard.**

One cupful of boiled rice, two eggs, two cupfuls of milk, half cup of sugar, a teaspoonful of butter, vanilla or nutmeg to taste.

Beat eggs and sugar and butter together. Pass the boiled rice through a meat grinder with a fine cutter or through a coarse sieve. Add sugar and butter to the beaten eggs then add hot milk and stir thoroughly. Sprinkle with nutmeg or add vanilla and bake in a pan of water until brown.

**Unsweetened rice custard.**

To one cupful of boiled rice mashed to a paste, add one egg and beat thoroughly; then add a cupful of milk, or milk and water, or water, a teaspoonful of butter, salt, and pepper. Thoroughly mix and bake until brown. Grated cheese makes a delicious addition to this custard.

**Rice waffles.**

One cupful of cold boiled rice pressed through a sieve. One cupful of flour, half a teaspoonful of salt, tablespoonful of sugar, teaspoonful and a half of baking powder, two eggs, heaping teaspoonful of butter, and sweet milk enough to bind. First rub the butter into the sugar; sift together the flour, salt and baking powder; add these to the sugar and butter; then add the yolks of eggs and the rice; thin this with milk to the consistency of cake batter; fold into it the beaten whites of the eggs. Have the waffle irons hot and carefully greased; fill two-thirds full, close, and turn when brown.

**Rice waffles.**

Three cupfuls of sifted flour, three cupfuls of boiled rice, one cupful of milk (or half water), one teaspoonful of butter, one tea-

spoonful of yeast powder, salt to taste, three eggs. Mix salt and yeast powder into flour and add the butter. Into the well-beaten yolks add the milk. Mix the milk and eggs into the flour. Now stir in boiled rice and add the well-beaten whites. Cook immediately.

#### Rice batter cakes.

Made on the exact proportion of the waffles recipe except an additional half cup of milk or half water and milk.

#### Rice pudding without eggs.

Put into a well-buttered pan half a pound of rice, well washed; pour over it three pints of cold milk, sweeten and flavor to taste; put a little butter and nutmeg over the top. Bake two and one-half hours in a slow oven.

#### Chocolate rice pudding.

One quart of sweet milk, three ounces grated chocolate, one cupful of warm boiled rice, one cupful of sugar, yolks of four eggs. Scald together the milk and chocolate, let cool, then add to the rice with the eggs and sugar, and bake. When done, spread the well-beaten whites and four tablespoonfuls of sugar over the top and brown. Serve with whipped cream.

#### Rice pie.

With good paste line a deep pie pan, boil a half cup of rice in half a pint of milk and water until very soft, and rub through a sieve; add half a pint of cream, three beaten eggs, a pinch of salt and a cupful of sugar. Pour into the paste-lined tins and bake twenty minutes.

#### Rice orange or lemon pie.

Cupful sugar, yolks of three eggs, one teaspoonful of butter, three teaspoonfuls of sweet milk, two teaspoonfuls of boiled rice mashed fine, grated rind and juice of one orange or lemon. Beat all together, pour into lined pie pan, and bake. When done, spread with meringue of whites of eggs and sugar, and brown.

#### Rice molasses pie.

Into a cup and a half of molasses stir one teaspoonful of soda until white; add one-half cup of finely mashed boiled rice; a cup of sour cream and a tablespoonful of butter; and three well-beaten eggs. Bake with two crusts. This is sufficient for two pies.

#### Rice chocolate pie.

One quart of milk, yolks of two eggs, four tablespoonfuls boiled rice put through a sieve, two squares of chocolate melted, and one cupful of sugar. Scald the milk in a double kettle, add the eggs, rice, chocolate and sugar, and stir until thickened slightly. Bake in under crust and cover with meringue.

**Rice sponge cake.**

Four eggs (leaving out the white of one), two cupfuls of sugar, three cupfuls of rice flour, three-fourths cup of boiling water, salt-spoonful of salt, one and one-half teaspoonfuls baking powder. Cream the sugar and yolks together, add boiling water and flour (into which the baking powder and salt have been thoroughly sifted), and flavor with half a teaspoonful of vanilla. Put into a square tin and bake thirty minutes. Frost while warm.

**Rice pound cake.**

One pound rice flour, half pound of butter, one pound of sugar, ten eggs, the juice of one lemon. Cream the butter and sugar together, add the yolks well-beaten with the lemon juice, then add gradually the flour (into which three teaspoonfuls of baking powder has been thoroughly sifted). Lastly, fold in the whites, beaten till dry. Bake in a moderate oven, for the first half hour; then gradually increase the heat. Bake an hour.

**Rice-flour rolls.**

Dissolve a cake of compressed yeast in two tablespoonfuls of water. When thoroughly dissolved add a cupful of sweet milk and the same amount of warm water (mix before adding) making a pint of wetting (this must be warm, but not hot); also add a teaspoonful of salt; now add enough rice flour to make it a stiff batter. Upon the molding board put a bed of wheat flour, and on this knead the rice mixture to a firm loaf. Knead it ten or fifteen minutes, adding flour as is required; then put it into a well-greased bowl; brush the top over with butter, cover closely and stand in a warm place; let it rise about three hours. Again place it upon a molding board; make it into rolls, place in a pan, brush over with butter and let rise until twice their size—about one hour. Bake in a quick oven twenty-five or thirty minutes.

**Rice floating island.**

One cupful of sweet milk, one tablespoonful of melted butter, one and one-half tablespoonfuls of sugar, a pinch of salt, the yolk of one egg, beaten, and a half cup of rice flour—cooked together ten minutes. This forms a soft custard. As soon as cooled a little, pour into a deep glass dish and set away to cool. Beat the whites of two eggs to a stiff froth; sweeten with two spoonfuls of pulverized sugar, adding a little extract; place in spoonfuls over the surface of the custard; and upon each of the islands put a small piece of currant jelly.

**Rice-flour steam pudding.**

Beat the yolk of an egg in a bowl; add a cupful of buttermilk in which a teaspoonful of soda has been stirred, a teaspoonful of salt, a tablespoonful of sugar, and a tablespoonful of butter. Into this mixture stir a cupful of rice flour. Beat, then add beaten white of egg. Pour into a well-buttered tin can or pail a part of the mixture,

then add more butter and some prunes, using for this quantity of butter about a dozen prunes. (Any other fruit may be used, as bananas, peaches, or, best of all, cherries.) Cover the can closely, set it in boiling water, and keep boiling two hours or more. When ready to serve, open the can and turn out the rich brown loaf. Cut it into slices and serve with the following sauce: To one cupful of sweet milk heated in a shallow pan, add a teaspoonful of sugar, a tablespoonful of butter, and a pinch of salt. Wet one and one-half tablespoonfuls of rice flour with a little milk, stir into the heated milk, and cook fifteen minutes. Remove from the stove and season with extract.

#### Rice-flour blancmange.

Take four ounces of rice flour, three ounces of sugar, a little extract, and two ounces of fresh butter. Add one quart of milk and boil from fifteen to twenty minutes till it forms a smooth paste, not too thick. Then pour into a mold, previously buttered. Serve when cold with cream or preserved fruit.

#### Rice invalid dish.

Butter a common glass (previously warmed) and line with warm, boiled rice; into it pour the stiffly beaten white of an egg, to which a pinch of salt has been added; on the top lay the unbroken yolk. Set the glass in warm water, let come to a boil and cook just long enough to set the white. Lay a doily on a small plate and set the glass on this, and put beside it a piece of dry toast.

#### Rice jelly.

Mix a heaping tablespoonful of rice flour with enough cold water to make a smooth paste; add a scant pint of boiling water sweetened with two tablespoonfuls of sugar, and boil until clear. Flavor with lemon juice and mold.

#### Rice water.

Mix one tablespoonful of rice flour with enough cold water to make a smooth paste; add two pints boiling water; sweeten and boil till clear. Cool on ice and serve very cold, but not iced.

#### Rice water for babies and invalids.

Boil one cupful of well-washed rice in three-fourths of a gallon of water until quantity is reduced to about three cups. Strain.

Serve the rice water in nursing bottle in the proportion of two-thirds rice water to one-third cow's milk. If the child is delicate or feverish and can not digest milk, serve the rice water alone, sweetened or salted to taste. Above proportions may be reduced or increased according to need.

#### Rice stuffings.

Cold boiled rice may be substituted to advantage wherever bread is used in stuffings.

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**Rice border.**

Boiled rice banked by spoonfuls around the dish is what is meant by a rice border.

**Rice left-overs.**

There is no vegetable that is so useful as a "left-over." Rice can be reheated and in every respect equals the freshly cooked grain. This makes it invaluable as a breakfast food, as it can be prepared at the dinner meal and in five minutes be ready for breakfast.

To reheat rice, pour over a quantity corresponding to what a cupful of raw rice yields, a scant half cup of boiling water and let thoroughly heat without putting on a cover. Or place rice in colander over a pot of boiling water. In five minutes it will be heated.

**Rice cooked in milk.**

A very luxurious way of cooking rice is to substitute milk for water. Boil the milk before adding the rice and proceed as in directions for practical cooking of rice, page 159.

**Rice for breakfast.**

Boiled rice served with milk or cream after the fashion of the ordinary breakfast foods, will be found to compare favorably with any of the much-advertised cereals.

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## APPENDIX D.

## APPENDIX D.

### INDEX TO COOKING RECIPES AND OTHER SPECIFIC DIRECTIONS AND DISCUSSIONS.

(NOTE.—This index does not contain references to the rice recipes appearing in Appendix C.)

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