

WHAT THEY SAY . . .

The search for and discovery of various uses for our many food resources is by no means an easy task. It requires imagination, curiosity and diligence to develop quality food products from their raw stage. Thanks to Miss Maria Y. Orosa, who can be called our country's pioneer in the field of food technology, initial experiments have been made which can now be utilized by our present-day food technologists. Records of her work have been scattered as a consequence of World War II, some of which are printed while others still remain in her handwriting.

It is to the credit of her niece, Helen, that an attempt is made to collate these materials so that contemporary food scientists and processors, students as well as homemakers might benefit from Miss Orosa's experience with food mate-

— EVA GONZALES

Dean U.P. H.E. College

Helen Orosa del Rosario is to be highly commended for gathering Maria Y. Orosa's articles and recipes from diverse sources and for compiling them in this book. It is the first authentic and comprehensive collection of its kind and deserves the serious attention of all those who are interested in improving the country's nutrition and diet.

— AMELIA T. VALENCIA

Food Page editor, *Manila Chronicle*

If this book receives the general patronage it deserves, food in Filipino homes will be more palatable, more nutritious, better balanced, and equally important, more economical to prepare. Helen is rendering a patriotic service to the country by publishing this valuable anthology.

— DORIS TRINIDAD

Food page editor, *Manila Times*

Helen Orosa del Rosario is like her aunt, the late Maria Y. Orosa, in more ways than one: she is intelligent, industrious, resourceful and imbued with a deep sense of nationalism. This explains why she has painstakingly compiled and edited a unique primer and guide to better health and living.

— AIDA F. ABAYA

Specialist, APC

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by: Helen Orosa del Rosario

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INTRODUCTION

By Helen Orosa Del Rosario

I was the closest relative to have stayed with Miss Maria Y. Orosa during the Japanese occupation, and the last to have seen her alive.

Let me just briefly recall an incident. I saw her quite often in her office on San Andres or at our house on Taft Avenue where she was then staying, and once, upon greeting her, I cried and clung to her for no apparent reason. She then gave me a pack of cigarettes which bore the picture of General Douglas MacArthur and the inscription "I shall return." Forthwith, she told me that the Americans had already landed in Luzon and that I must be hopeful. This made me certain of her underground activities. When I said goodbye, I embraced her tightly and she remarked, "*Mahina pala ang loob mo.*" ("You seem faint-hearted.") Now I know why I cried: instinctively I had felt it was the last time I would see her, and subsequent events proved I was right.

Looking back, I naturally cherish all the hours I had spent in her company during the war, and I feel privileged to have shared with her in her secrets, sorrows, friends, and whatever happiness — it must have been precious little! — she might have had during those harrowing days of bitter separation from loved ones, days of privation, fear, real risk and danger. She was a genuinely warm friend and aunt, and she also shared in my joys and sorrows.

Miss Orosa told me she had a manuscript of her works (this included her famous recipes). It has been my long-time dream to revive and publish her writings and, in so doing, help her further realize her life-long ambition to improve the lot of the Filipino family, both the rural and the urban. I have therefore deemed it my mission to try to publish whatever is left or salvaged of that manuscript.

Through the proddings of the women who worked with her* and who, twenty-five years after her death, remain steadfastly loyal to her memory, my dream has come to fruition with this book, on her twenty-fifth death anniversary.

* They are now fondly referred to as the "Orosa girls".

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FOREWORD TO THE ANNOTATED EDITION

The U.P. Home Economics Alumni Association is reprinting this Recipe Book of the late Dr. Maria Y. Orosa as its contribution to the centennial celebration of Philippine Independence - a way of honoring outstanding women who contributed to the advancement of Home Economics in the Philippines.

Most of Dr. Orosa's work in this volume were first published 70 years ago. The first edition of this compilation was published in 1970. The content of this book however is as relevant today as was when it was first written not only for its historical value but for its practicality.

This edition is annotated with recent developments in food science and technology to keep the information up-to-date.

The annotations were made by two of our food technology alumni members. Sonia Y. de Leon and Libia L. Chavez.

We hope that you enjoy reading and trying the recipes in this book and find out its practicality.

Evelina G. Escudero
HEAA, President
1998-2000

The Woman Who Was Maria Y. Orosa

By: Rosalinda L. Orosa



To this Day, 53 years after Maria Y. Orosa died in the Battle of Liberation, total strangers approach me to say that her "magic food" (among her many innovations) sustained them through those lean years of the Japanese Occupation. At the opposite extreme, young friends, curious to know why a street is named after her, ask me candidly: "Who was she?"

The old generation's gratitude to Maria Y. Orosa and the new generation's ignorance of her life and labors seem to call for an account of them. Furthermore, in these trying times, there is particular need to remember how the country's pioneer pharmaceutical chemist first showed us the way toward self-sufficiency in food, and how, as captain in the underground movement, she proved that courage and patriotism are no empty words.

In 1916, audaciously defying convention and her strait-laced mother, Maria ran away from home and boarded a States-bound steamer as a stowaway. She washed dishes and scrubbed the floors on board ship for her passage. Later, while studying in the University of Washington, she lived with the dean of the college of pharmacy and his wife, doing housework in exchange for lodgings. Few literate and highly educated people could have matched her respect for honest manual labor. Her outside jobs included washing dishes and mopping floors in restaurants, picking fruits and working in canning factories not only to support herself but also to assist Filipino students in financial distress - this despite the dean's repeated assurance that if she ever needed money, all she had to do was ask him for it. She took immense pride in the fact that not once, through her four-year study, did she broach the subject of money to him.

Her competence and academic record must have been impressive because after she earned bachelor and master of science degrees in pharmaceutical chemistry in 1919, the US government appointed her partial *pensionada* and, the following year, assistant state chemist of Washington. No other Filipino before or after her ever held the prestigious position, but she gave it up, as well as the honor and emoluments attendant to it, and came home in 1922 to serve her people.

With only one untrained helper at the Bureau of Science, she organized the Food Preservation Division, and although this task was challenging and time-consuming, she managed to teach at the Centro Escolar University besides. In 1926, the Philippine government sent her as a *pensionada* to the US to study commercial scanning. She did so with such thoroughness that by the end of two years, she had observed in over 50 canneries in China, Japan, and Hawaii. Upon her return in 1929, she went back to the Bureau of Science as chief of the Food Preservation Division.

Readily recognizing the value of her work, the secretary of agriculture and commerce created the H.E. Division in 1932, transferring this to the Bureau of Science in 1934, and finally converting it into the Plant Utilization Division of the Bureau of Plant Industry, the division she headed to the end of her career.

Jose I. Sulit, her immediate assistant and former chief chemist of the Bureau of Fisheries, writes in his scientific report *Some Outstanding Research Studies Conducted by the Late Maria Y. Orosa*: "It is quite clear and apparent that many food laboratories, both government and private, are now using the results of the studies that emanated purely from Miss Orosa's resourcefulness. In fact, some government laboratories are still doing the very same experiments if not continuing where she left off." (See pages refer to the pages for Sulit report).

In tangible terms, what were these experiments?

Using tamarind, santol, calamansi and other native fruits as sources of acids, Miss Orosa manufactured jelly from guava, made *toyo* from soy and other beans, and even from copra. She turned cucumber, green tomato, etc. into sweet-mixed pickles; powdered soybean into "magic food." She substituted cassava flour and powdered green banana (*saba*) for wheat flour. Dried candied fruits went into fruit cakes. Her *calamansi* concentrates replaced foreign bottled drinks.

In her obsession to excel or at least equal imported products, and thereby lead the Filipino toward emancipation, she pioneered in preparing soybean milk, jams, jellies and marmalades, and agar from seaweed (*gulaman-dagat*). She used *duhat* and other Philippine fruits in manufacturing wine, and coconut in preparing flour, cassava, cocohoney, milk, *nata de codo*, vinegar, soup, cheese, butter, cooking and salad oil, and candy.

Nothing seemed to escape her insatiable scientific curiosity. She experimented with peanuts in the making of salad and culinary oil, butter, flour and candy (e.g., peanut brittle). She turned banana, mango and ripe tomato into catsup; converted coconut into a pharmaceutical vehicle, and rice bran into food rich in Vitamin B₁ or thiamine - that which combats beri-beri in nursing mothers. She extracted nicotine insecticide from tobacco dust and tobacco waste material, devised a practical method of determining retene from derris roots.

As frugal as she was ingenious, she determined the food nutrients of by-products to minimize wastage; thus, the byproducts of soybean curd were turned into flour, those of *nata de piña*, into vinegar. Indeed, she was so ahead of her time that Sulit points out in retrospect: "Before Del Monte ever thought of making vinegar from pineapple, Miss Orosa had already been doing that years prior to World War II."

Incidentally, what kind of employer was Maria Orosa? A former demonstrator, Rosa G. Buenaluz, reminisces: "She was generous to excess. She'd remember clerks and janitors on their birthdays and personally take

gifts of food and money to sick employees. She never considered doing so beneath her dignity.

"In those days, we often prepared the menu for Malacañang state dinners under her supervision, and she'd divide the food left over equally among us."

In our society, it is a rule of thumb for most public servants to betray the people's trust - to enrich themselves in office, often with outrageous blatancy. Maria Orosa, a rare and unique exception, was not only scrupulously honest but also quixotic. Cabinet wives frequently asked her to cater for their big parties, assuming that her office would absorb the expenses. Rather than charge these women, many of whom were her close friends, she took the expenses out of her own pocket.

Miss Orosa's peacetime work was not as dramatic nor as feverish as her tremendous war effort. But it was just as significant, having improved rural life on a national scale. In 1929, years before "a-well-for-every-barrio" program was conceived, she visited remote areas throughout the Philippines, demonstrating to housewives the preparation of economical but nutritious meals. A wizard with ingredients, she concocted a receipt for fish balls which tasted like corned beef.

The "Palayok Oven", her best-known and most clever invention, was boon to barrios housewives who had no electricity. Placing a bit of wire and tin inside the lowly earthen pot, she could bake anything in it, from chicken to cake. How the "Palayok Oven" can conserve energy today!

Much earlier, she established Health-Heart-Head-Hand (4-H) rural improvement clubs (patterned after those in the USA), and by 1924, it had 22,000 members. She founded the Home Extension Service - President Garcia was later to declare her birthday (Nov. 29) Home Extension Day - and sent hundreds of her demonstrators to the barrios to teach women better home-making, child care, meal-planning, food preparation and preservation and poultry-raising. For instance, housewives were enjoined not to throw away *darak* and *sapal* so they could turn these into biscuits and coconut brittle. By then, Miss Orosa had waged her own "Green Revolution" with her vigorous campaign for backyard gardening. She had also expanded home crafts to include, among others, the making of a slippers, rugs or baskets from discarded clothes, stockings and jute sacks.

For her vast enterprises, Miss Orosa counted on the help of her dependable assistants, many of whom are now university H.E. professors and culinary experts sharing, in turn, her countless "trade secrets" in cake baking and cake-decoration, and not the least, her 700 recipes, each of which was kitchen-tested under her personal supervision. Incidentally, not a few of these recipes have found their way into many of today's fast-selling cookbooks - without due acknowledgement or attribution!

Miss Orosa constantly told her assistants, "When you start an experiment, finish it and write the results for others to use." The results of her

own experiments, begun in 1935 and continued progressively through the war years, would have filled volumes had they not gotten burned in the liberation of Manila.

On this great loss, Sulit writes: "I was, however, consoled by the fact that the results of her research studies, as implemented by herself, found their uses in the manufacture of various food products during the Japanese Occupation, to the extent that so many tons were sold to the hungry as substitutes for imported items. In the emergency, Miss Orosa's capacity for research was exceedingly fruitful, and served as the fountainhead of new ideas which played a major role in helping meet the needs of our country and people."

It was during this period that Maria, a younger sister of my father Sixto, came to live in our house on Taft Avenue. In house, later to be burned by the Japanese, was close to her place of work at the Bureau of Plant Industry on San Andres. As a teenaged girl, I sometimes tagged along with my mother to the Plant Utilization Division my aunt headed. Here I would see hundreds of women working or attending demonstrations on cooking or food preservation. Running hither and thither, my aunt seemed to be everywhere at once. I subsequently learned why there was always such a throng in her office: to give employment to all the 400 women students stranded by the war, she had created candy, cake, cookie and canning units - each supervised by a key worker - to keep them busy and sufficiently fed.

While my aunt stayed with us, she conjured the image of a magician who seemingly produced instant food from thin air. With each fresh supply she brought home, few of us would then care for any left-overs from the last meal. I vividly remember my aunt eating *tulingan* (native tuna) for days on end, in the spirit of mortification. "Don't you ever tire of eating that fish?" I once asked her, and she replied, trying to sound convincing, "But I really enjoy eating it."

My aunt was a lively stimulating conversationalist who dinned in my ear the value of time and of hard work. She did not talk much about herself; consequently, it was only after her death that I found out she was a captain with Marking's Guerills, and that she regularly supplied our soldiers at the front with food, including the protein-laden "magic food" that life-giving powdered soybean which sustained many a famished *guerillero*, prisoner-of-war or American internee in the concentration camps of Capas, Los Baños, Camp Dao and the University of Santo Tomas. She would insert food packages inside bamboo tubes, then these to the UST internees through male employees disguised as carpenters. (A true leader, she extracted absolute loyalty from her subordinates.) Religious order were also among my aunt's countless beneficiaries. In an official letter, Fr. John Hurlye, S.J. acknowledges her "gifts of food and medicine to Jesuit communities at Ateneo and Sta. Ana."

Although fear gripped the city, tightening the noose around everyone's neck, my aunt never missed going to office even if it meant braving

the streets that crawled with Japanese sentries (*kepetai*). Nor did she ever forget sending a daily ration of food to my sister Helen, then a student nurse at the Philippine General Hospital. On special holidays, my aunt would send canned fruits and delicacies to her many friends confined in the hospital, among them her *compadre* Gen. Vicente Lim and Theo Rogers, and to other hungry or ill-nourished Manilans who, subsisting on the meager and monotonous diet of *kangkong* or *talinum*, must have regarded her largesse as manna from heaven.

By then we had already fled the beleaguered city and evacuated to Batangas. Before we left, however, we pleaded with my aunt, again and again, to go with us. But she was a soldier and soldiers do not leave their post. Unmindful of her personal safety, she invariably told us: "My place is here. I cannot in conscience abandon my work and my girls."

I remember the last time I saw her. We were leaving for the province at dawn, and my aunt, so as not to miss seeing us off, had rushed down the stairs, forgetting to put on her lunging robe. There she stood in her pajamas, a sweet smile on her face, her chubby hand waing at us.

Those who chose to stay with her, and who survived the holocaust, attest to her resolute courage to the very end. Sensing that their days were numbered, Japanese army officers, now edgy, made lightning visits to her office, harassing her and threatening her with bodily harm, with death even, if she did not stop her work. She was undaunted. She carried on until she was wounded by a shrapnel and taken to the Malate Remedios Hospital where, not much later, she was directly hit in the heart by another shrapnel during a bombing raid. Not without a touch of irony, the raid had been conducted by American planes whose coming she had anxiously awaited, having obtained advance information as a ranking officer in the resistance movement. Her death was most untimely: how she brimmed with plans to set up, as soon as peace was restored, nation-wide rehabilitation projects along her special skills!

But she had done more than enough.

Assessing her lifework, Sulit concludes: "As the years go by, her monumental achievements will be cherished forever by our sons and daughters unto eternity."

Friday November 27, 1959

She loved her people by Kayumangi N. Ongchungco

The late Maria Y Orosa, like work progressive leaders, always regarded The Filipino people as one big family. She proved it and died working on her projects on home and family living. It is this ideal environment which she helped to develop that peoples from other countries discover and yearn to adopt.

A few years ago, six women from the Nationalist China, Taipei returned to their country bringing back with them a month of experience and observation on home extension service of the Philippines. During their atay, they worked, lived and played with the field personnel of the Bureau of Extension and its cooperators—the members of the rural improvement clubs and 4-H. clubs in several rural commitees in the country, besides visiting homes and introducing them to some 200 women working on dressmaking as their home industry projects.

Earlier than this Taipei group, women from other countries, government officials of Thailand, Australia, Indonesia and Nepal.

Later years found rural women, following her teachings through her field personnel, engaged in home projects such as child care, meal planning, food preparation and preservation poultry and piggery raising, home gardening and others that are now accepted.

Orosa formed the Home Extension Service in 1923 as an adjurned to the Plant Utilization Division of the Bureau of Plant Industry, which she headed. She conceived of the idea that researches and studies as being undertaken by her on food preservation would be more effective if relayed to rural people for practical application.

Trades and industries were also encouraged among the rural women resulting in the production of slippers, rugs, baskets and other home industry products which found their way to the foreign as well as local markets. And all the which, more and better methods of food preparation continuously resulted from her studies and researches providing form families facilities with fractional ways of preparing more nutritions food from locally available materials.

By 1941, about 22,000 rural women were already engaged in the numerous scientifically tested home techniques, and were practising how to become letter citizens in the activities of their rural improvement clubs which by then had increased to 437. Present figures are now 45,545 members. Present figures are 1,667 clubs with 43,545 members.

CEU PAYS TRIBUTE TO MARIA Y. OROSA

Centro Escolar University will hold a memorial mass on February 13, 1995 9:00 a.m. to commemorate the 50th death anniversary of Maria Y. Orosa, pioneer food technologist, war heroine, and humanist. She taught at Centro Escolar de Señoritas before the war upon her return from the United States where she earned her master's degree.

After the Mass at the University Chapel, CEU Administrators headed by President Lourdes T. Echazuz will receive the family members and guests at the Reception Room after which they will proceed to Maria Y. Orosa Street in front of Holiday Inn Hotel for the blessing of the street marker.

Mary Orosa and the vanishing roselle

Among the botanically untutored, the plant called roselle (*Hibiscus sabdariffa*) is not likely to stir whispers of ecstatic recognition. That is not to be marveled at. Hardly anyone today recalls what the roselle of prewar days looks like.

At one time in this nation's arboreal past, nurseries and homelots in many Philippine communities grew roselle in carefully nurtured plots. Plant utilization technicians of the prewar Bureau of Plant Industry, led by the redoubtable Maria Orosa, added their bit. They developed roselle recipes for food, wines, pop drinks, baked products, condiments, jams and jellies.

"Roselle in those days was the closest anyone in the plant world could get while learning his botanical ropes," said an old BPI technician interviewed by this writer. "It had so many applications and uses many looked upon it as a real wonder plant."

Just before the outbreak of World War II, the cultivation and utilization of roselle was growing rapidly in homes and communities nationwide. Fifty years later, hardly any recollection of it exists.

That situation could still change, thanks to the timely intervention early in 1995 of a Cebu-based plant enthusiast named Ray Ong. Ray reintroduced roselle to a Luzon-based non-government organization that had heard about the plant from a book on the life of Maria Orosa, compiled and edited by her niece, Helen Orosa del Rosario.

Maria Orosa was the trailblazing plant and food scientist who left her name on many unequalled achievements in food and plant utilization systems. Reading through the pages of the book, one senses the furious energy and nationalistic pride that drove this woman obsessed with the mission to make the Filipino household self-sufficient in its food, health and its nutrition needs.

Besides supplying viable roselle seeds to the NGO, Ong gave them several packets of a Thai-produced roselle drink. Then he left them on their own.

The plants from Ong's tiny packet of seeds grew vigorously enough in pots — but seemed to freeze just before reaching their flowering stage. Some plants were transferred from pots directly to open fields. The rest died *in situ*. The transplanted plants got in the way of other experiments and were promptly forgotten until shortly after the passage of supertyphoon *Yoling*. Field workers clearing heavy undergrowth discovered the transplanted plants bearing heavy clusters of reddish-purple flower-like fruits.

They stripped off enough fruit to squeeze juice drinks and jelly-making material from it. The taste lived up to the billing given roselle in the Orosa book.

"The flavor of roselle is very similar to that of the cranberry, the jams, jellies, sauces and preparations are very similar in taste and appearance to those made from the cranberry. Its quality excels that of many soft drinks commonly sold in Manila. There is little doubt that if the excellent preparations made from roselle become better known, its planting and cultivation will boom. Its exploitation will mean added delicacies for our national table, a new source of income for idle farms, full utilization of farmlands where it can be made an intercropping plant, and a new item for the export market."

Nearly 20 pages in Helen Orosa del Rosario's book are given over to myriad roselle recipes attesting to the versatility of this all but forgotten jewel of the Philippine plant kingdom. Now, save for mainly unrecognized survivor plants growing helter skelter in isolated country yards and gardens, roselle has gone underground the way so many other precious Philippine plant species have vanished.

But with horticulturist Ray Ong's rediscovery and transfer of roselle plantsstock back to private hands, one avenue has reopened for its reintroduction into the mainstream of Philippine plant life.

Mary Orosa's 50th death anniversary was observed quietly last February 13. Her birthday was November 29, 1982. Both events came and went with little notice. Neither the nation nor the people in whose behalf she has devoted her whole life could recall more than brief snatches of the heroic work she did for her country during its most critical years. Few would ever know that the government's extension service, the 4-H club movement and many other achievements came into being because of the energy and vision of this heroic Filipina.

Not that it would have mattered much to Maria (Mary to her fellow workers and kin). She was a woman, said her niece, Rosalinda L. Orosa, of "tremendous diligence, industry, drive and resourcefulness." Credit, whether of the financial or the altruistic kind, did not interest her. Service to her people and to her country (a lost cliché in these development-or-bust obsessed days) were all that mattered to Mary Orosa.

It's not surprising, therefore, that as the calendar moves into the 51st year of her martyrdom, Maria Orosa's hand should again reach out to her Filipino countrymen bearing her beautiful roselle plant, yet another blessing for her beloved country. Not even the possibility of a new agricultural mafiosity turning cold shoulders upon her ageless and tested formulas can detract from the intrinsic value of her noble work.

"It is difficult to make a complete list of my *Tia Mary's* activities in war and in peace; she was a woman of tremendous diligence, industry, drive and resourcefulness," wrote her niece, Baby Orosa, Paging Lizza Nakpil's Centennial Commission. Quoting a fellow worker and scientist, Dr. Jose Sulit: "I am sure that as the years go by, her monumental achievements will be cherished forever by our sons and daughters unto eternity."

MARIA Y. OROSA CENTENNIAL, 1993

As the centenary of Maria Y. Orosa ends, we recall the ingenuity, resourcefulness and nationalistic vision of the country's pioneer in food technology, nutrition and preservation, as well as her valor as a war heroine.

Even in death, her service to countless Filipinos continues. Long before commercial food manufacturers thought of making vinegar from pineapple, ketchup from banana, mango and tomatoes, agar from seaweed, wines from native fruits, pickles from native vegetables, Miss Orosa had already done so. Her ground cassava and green *saba* substituted for wheat flour; her fruit juice concentrates, for foreign bottled drinks.

After earning B.S. and M.S. degrees in Seattle in the 20's she was appointed assistant state chemist for Washington. Yet she chose to return to serve her people. She demonstrated canning and food preservation, believing that these, on a national scale, could help the economy. She organized Rural Improvement Clubs and Home Extension Services in the barrios to enrich the Filipino diet and to introduce the concept of "a garden and an industry for every home." Her invention, the "Palayok Oven", enables poor housewives to bake without electricity. Her over 700 kitchen-tested recipes are still in use.

During the war, she created jobs for hundreds of stranded students. Her "Magic Food" of protein-rich soya bean, and other nourishing items she concocted, with unmatched wizardry, from discarded by-products kept starving civilians alive. Risking torture, she smuggled food to American internees at UST and soldiers on the war front.

A guerilla captain, she defied orders of her superiors to evacuate the city. Valiantly staying at her post, she died in the line of duty, a shrapnel from a US strafing unit having pierced her heart.

REMINISCENCES

Miss Maria Y. Orosa had a powerful drive for achievement, an untiring capacity for work and an ardently sincere wish to contribute technological skills to promote man's welfare. She seemed forever on the go, enthusiastically engaged in the various tasks of thinking, learning, creating, guiding, directing, discovering and promoting along the areas of plant utilization and home extension service.

She achieved distinction and conquered the heights out of her very own diligence and perseverance, yet she was an example of genuine humility. She would relate to us how she worked and even washed plates during her struggling days in the United States. She loved to picture how funny she looked, wearing coats which were too small or too big for her, with sleeves either too high or too low from the wrists because they were all hand-me-downs and give-aways. She could not afford to buy any.

She would always meet the field worker with a radiant smile and an inspiring word of welcome. She was a disciplinarian, exacting in her assignments, yet had that warmth of personality which drew us to her and the dynamic power to spur us to give the best in us.

She had a sparkling wit and humor. I used to hear her say in some of her speeches, "One characteristic which is very much desired of an applicant for the position of a Home Demonstrator is good looks. Look at my girls. They are all pretty. Is it not an irony that I, the chief of the Home Demonstrators, cannot be called beautiful?"

To her, home extension service was the noblest calling, and accordingly, she regarded her home demonstrators as the best of girls. She would always extol our praises so lavishly that, deriving from her words a deep sense of security and faith in ourselves, we would be ready to meet greater challenges.

AMADEA E. MEDINA

Chief, Home Economics Program Division

A. P. C.

MEMORIALS TO MARIA Y. OROSA

The great Maria Y. Orosa is gone but her influence remains. In the Philippines today, homes continue to preserve and utilize fruits and vegetables in season; homemakers prepare nutritious meals for their families; home gardens blossom into landscaped gardens; crafts develop into home industries; canning leads to more and more factories; food utilization turns out many interesting by-products. Such are the results of **Maria Y. Orosa's** years of intensive scientific researches, painstaking educational endeavors and indefatigable missionary dedication to service.

Her numerous friends, co-workers, admirers and sympathizers have on several occasions, year in and year out, perpetuated her memory through the work she had lived and died for, extending education for the upliftment of the Filipino family and home. This group functioned into a Maria Y. Orosa Home Extension Movement ((MOHEM) with the assistance of the Bureau of Agricultural Extension now the Agricultural Productivity Commission. As a result, the group, whose members are informally known as the "Orosa girls", is credited with the following contribution to the field of home extension:

1. Presidential Proclamation No. 129 recognizing November 29th, the birthday anniversary of Maria Y. Orosa, as National Home Extension Day. This day is being celebrated in every province under the auspices of the Rural Improvement Clubs with the cooperation of the provincial extension service.

2. A Maria Y. Orosa Hall, comprising the whole fourth floor of the present Agricultural Productivity Building, was dedicated to her and named in her honor. This hall was completely furnished and equipped by private individuals many of whom chose to remain anonymous, for the chief purpose of extending educational facilities, in the form of free demonstrations, to the public. Earlier, a memorial building was also dedicated to the late Maria Y. Orosa at the Bureau of Plant Industry in 1950.

3. Monthly cultural demonstrations were initiated in the Maria Y. Orosa Memorial Hall to make Rural Improvement

Club members, staff and employees up to date with progressive trends. The following demonstrations, accompanied with lectures and exhibits, can be cited: Flower Arrangements, The Food of the Future," CHLORELLA", Food Preservation By Drying, Plant Arrangement, Cultural Presentation on Drama, Cultural Presentation on Interior Decoration, Plant Exchange Day, "Singing is Everybody's Business", Practical Gadgets for Homemaking. Homemaking in Finland, and various cooking demonstrations.

4. Home Extension Day celebrations have contributed the following achievements in the field of home extension as a result of contests conducted among Rural Improvement Club members:

- a. "New Rice and Corn Recipes." Contest on the utilization of rice and corn produced original preparations
- b. "Practical Gadgets for Homemaking." A publication of the prize winning gadgets is the result of this contest. (1960)
- c. "Plant Arrangements". The trends in the use of plants for the home were set as a result of this contest which included the following phases: window gardens, rock gardens, aerial gardening and dish gardens.

In the United States, the Department of Agriculture, as well as various universities and research laboratories have given credit to Maria Y. Orosa's great achievements. To cite two such cases:

1. While visiting the University of California in Berkeley, I was shown the Food Technology Laboratory where I met a well known food technologist, Dr. Kruze. Upon seeing me, he instantly recalled: "A Filipina once came to observe in this laboratory but instead she did experiments and surprised me with the first frozen mangoes from the Philippines." He fondly recalled Maria Y. Orosa and her wonderful achievement. At that time, freezing was still unknown.

2. On a visit to the University of New Mexico Cooperative Extension Service, I was surprised to find that they were very much aware of the Extension Service in the Philippines. After my visit, an Extension Magazine of the University was

sent to me. To my biggest surprise, I found therein an article with a picture of the late Maria Y. Orosa, founder of Home Extension Work in the Philippines, associating it with my visit. — *Aida Fabiero Abaya*

Nov. 13, 1969

PALOMARIA-MARIA Y. OROSA MEMORIAL TREE

The Palomaria (*calophyllum Inophyldum Linn*) has been chosen quite appropriately as the Maria Y. Orosa memorial tree. *Palo*, the Spanish word prefixed to Maria, means pillar. The tree itself is widely distributed all over the Philippines, growing to a stately size and height. It is remarkable for its reliability as refuge and defense against violent storms. The seeds yield oil for soap making and in small districts it is used as illuminants, and the hard thin rounded shells used as containers of buri sugar sold as confection. It is indeed a versatile tree.

The Palomaria tree was planted in her honor, November 28, 1960. It is a strong reminder of the meaning and magnitude of her services to our people and the obligation that belongs to every generation to continue the fulfillment of her dream: Home Extension Day on the March. (Significantly on this day, the vigil light out of the Palomaria oil will be lighted as a symbol of her wisdom that will continue to burn forever.)

— *Benedicto Leño*

In 1929 Maria Y. Orosa started organizing women all over the country — some 22,000 at the very start — into clubs, called 4-H Clubs. Health, head, hands and heart were of Orosa adaptation and she gave them to the women for their cue as the power behind the individual family, the center of all life in the community.

— *Paciencia Torre Guzman*

RE-NAMING FLORIDA 'MARIA Y. OROSA STREET'

by Commissioner Francisco Saguiguit

Agricultural Productivity Commission

This very significant occasion this morning has a historic bearing on the lives of the working women in this country, particularly those in the home extension services of our government. I have no doubt whatsoever that the late Maria Y. Orosa's name is a byword in every phase of work designed for nation building and rural development in this country and there is little that a man like me can add to praises that have been lavished upon this great woman.

Perhaps, I can best give meaning to this ceremony by speaking for the more than 1,000 home management technicians and supervisors of the home economics program division of the Agricultural Productivity Commission and the 43,516 members of the 1,668 rural improvement clubs and 10,733 participants of 472 homemakers classes under the sponsorship of this division who is the heir of the legacy of Maria Y. Orosa. I am sure that in the hearts of these women and the countless others in the home economics profession today are unspoken gratitude for the honor that the city of Manila has bestowed upon their hero and model.

This occasion is, indeed, very significant in the sense that very few women in our history have been credited with the naming of a street. To the followers of Maria Y. Orosa, this street will be more than just a thoroughfare, but it will symbolize the service that this great woman has started. Just as home extension is the key to the enlightenment of the rural women to promote better homes and communities, this symbol of this street would encourage women to open new ways for the upliftment of this country.

Today, the woman plays a bigger and a bigger role in almost everything that the man is suppose to do. In fact, at times we are apt to say that this is a woman's world or that behind a pushing man is a pushing woman. While there are

exaggerations of the mind, yet they depict the real place of the women in our world today.

However, let these facts be not a cause for apprehension among the male population but rather let them be a promise of life, there is no doubt that man will soon have a dependable farmer.

In our work of increasing food production and rural development, today, we have learned to recognize the work of the home extension officers. For instance, our home management technicians not only help women to conserve the surplus food on the farm, improve the quality of the food or put up better homes for the family, but they must also take part in the preparation of programs for rural development. In our land reform areas, our H.M.T.'s assist housewives and farmers to prepare farm and home budgets.

The naming of this street to honor a great woman is a milestone in the home extension service of the country. Before all the officials of the city of Manila and the people who have made this occasion possible, I reiterate in behalf of the women in the home extension service of this country, our appreciation and thanks.

Brief Biographies of Maria Y. Orosa

Maria Y. Orosa, Pharmaceutical Chemist, Home Economist
—Bituin San Agustin

My Sister Maria — Dr. Sixto Y. Orosa

Bread and Rice — Yay Marking Panlilio

Maria Y. Orosa, Food Nutritionist — Valentin Loyola

Maria Y. Orosa — Paciencia Torre Guzman

Foremost Food Researcher — by Sol Gwekoh — Hall of Fame,
Manila Times

Editorials on Maria Y. Orosa on her twentieth death anniversary appeared in the:

The Manila Times

The Philippines Herald

The Manila Bulletin

The Manila Chronicle

November 29, 1965

FOR THE RECORD *

MARIA Y. OROSA — by Lyd Arguilla

She was gallant, she was brave. To know her was to be on intimate terms with generosity itself.

Her close friends called her Mary. To the guerrillas she was that mysterious somebody called "Anggie" (nickname for Maria), or some person with the code name, "Ready, Willing and Able," who kept sending up to the combat units bags of concentrated food that many a time had saved their lives.

Manilans will remember her powdered Magic Food which she prepared from soya beans in her capacity as chief of the Utilization Division of the Plant Bureau. In the lean days of the Japanese occupation this food found its way in American internment camps and private Filipino homes with growing children, to supplement a diet sorely deficient in nutrition.

I remember what she answered when approached to help the guerrillas: "Oh course. What do you want me to do? What can I contribute? I'm ready, willing and able."

And she contributed without stint. She gave money. She gave concentrated food and candy from the distributing store of the Utilization Division which she had to pay out of her salary.

Was there ever any friend who approached her for help and whom she turned down? I do not think there had been any. But as she was an excellent friend so she was a bitter and uncompromising enemy.

"Tell me," she used to say, when I'd visit at her office to slip a guerilla note into her hands or to "touch" her for guerrilla contribution, "what will these men in influential offices become when the Americans come back?"

I said, cynically, they'd probably be able to explain their actions away.

"But what about the speeches they make? How can they explain those away? If a man keeps quiet you can only guess what he thinks. But when he speaks he expresses what is in his mind and which you cannot know until he tells you. If you cannot believe what a man says, what can you believe?"

If she had been alive today she will probably be the most

* LIGHT, January 5, 1946.

assiduous and fervent denouncer of traitors and collaborators. She was uncomfortable even at the thought that she was employed in the government. She said it was true that she did not have to deal with the Japanese in her work. But the government was a puppet government. Did serving under it make her a traitor?

Those who did need her where she was, and that included Americans, and myself, and the guerrillas told her she was alright. That she was being more useful where she worked than if she went out, let us say, to buy and sell. That she was not serving the Japanese but her own people. I remember the bottles of calamansi syrup she was able to send thru me to the USAFFE prisoners of war; the soy sauce, papaya ketchup, peanut brittle and other foods processed by her division which helped make tolerable to the housewife the shortage of food products in the markets besides furnishing a means of livelihood for a goodly number of otherwise jobless women and girls.

Indefatigable, full of optimism and enthusiasm, she pushed thru experiment after experiment in food, with her capable and loyal assistants, all of whom I believe derived inspiration from her leadership.

I think of her and find words inadequate to describe that utter sense of loss which realization that she is dead gives me. Others who knew her as well as I did must feel the same way. For it is possible to contemplate with philosophical equanimity the fact that in a war there are those who die, but why she? Why one so true and loyal and so gifted? She had so much to give the world and humanity.

My sister, Remedios, tells me that a month before the liberation, she was with Maria Orosa at the latter's office. Mary showed my sister a letter I had written from the mountains asking her to get out of the city. I'd said something about street fighting being inevitable with Japs having hidden installations behind civilian skirts. I'd say bullets can pierce walls, shrapnel not choosing victims between Japanese or Filipinos. That I wanted to keep her and all my dearest friends for the victory lechonada after the war. She had not made up her mind what to do. Should she get out and leave her job and the girls? She had a post to keep. She kept it. And fell victim to a Japanese bayonet in the Rape of Manila.

Chapter I

PRESERVATION OF PHILIPPINE FOODS*

INTRODUCTION

Although it has long been the practice among American and European housewives to preserve fruit, vegetables, and some meat and fish at home, to the majority of Philippine women food preservation is unknown. It is astonishing, indeed, and almost inexplicable that this valuable home industry has not received its attention when it is considered that consumption of preserved foods in the Islands is large and that there is available a great abundance of foods to preserve. Many Filipinos are fond of canned foods and those imported, such as peaches, grapes, lichees, asparagus, etc., which are considered delicacies and are much in demand, in spite of their high cost. Canned salmon and sardines are consumed everywhere, particularly in places inland, where the supply of fresh fish is very limited. The importation of preserved foods amount to several million pesos annually.

Fruits, vegetables, fish, and other fresh food materials abound in the Philippines. A large portion of these go to waste. In Calibo, Iloilo, and other places where pineapples are raised for the fiber, truckloads of the fruit are left in the fields to decay. In other places, where transportation is still a problem, most of the fruits and vegetables unconsumed are left untouched.

Probably the reason why this important industry has been neglected is the great variety and abundance of fruits and vegetables raised in the Philippines, so that at least several kinds are in season all the year round; the most important reason, however, is the lack of technical know how. Because of the latter reason it is the object of this publication to ex-

* This article was published as Popular Bul. 1 on July 20, 1924.

plain in brief the general principles of food preservation and to advocate such preservation in the homes in order to utilize the fresh foods that now go to waste, and thus decrease the importation of preserves.

By preserving native foods at home Philippine women would be doing a valuable service to their country; for should food preservation be practiced throughout the Islands the benefits that could be expected to accrue to the country would be manifold. A few are here mentioned.

1. It would stimulate agricultural development by causing more fruit trees to be planted.
2. It would give profitable work to idle hands.
3. It would improve the general health of the people by supplying a more varied and balanced diet.
4. It would prevent the waste of perishable foods.
5. It would help mothers in building up happier and better homes.
6. It would stabilize prices by equalizing the food supply.
7. It would enable the people to save the surplus products of one locality to sell to other localities where there is a shortage.
9. It would tend to lessen the amount of imported food products which could easily be produced here.
10. It would help to make of the Philippines an economically independent country, instead of a country dependent upon others for a large part of its food supplies.

Food preservation began with the caveman and on its success depends mankind's ability to live a civilized life. Consequently, much thought and energy have been expended on this problem of food preservation, for it was soon learned through bitter experience that all food products which were not protected in some manner soon spoiled and decayed and returned again to the earth. Gradually the various ways possible to preserve food for edible purposes were worked out and now this knowledge is available to any one who will spend a little time and energy in study, for the subject is not complicated and really can be summed up in a few words. Water is the one great factor in the spoiling of food; therefore, to prevent this the water must either be taken away (the food dried, in other words), or else other means must be found to keep it from acting with the minute plant and animal life, everywhere present, that causes food to decompose.

Principal Methods Used In Food Preservation

A. *Drying* — Drying is probably the first known method of preserving foods. It is simple, easy to perform, needs but little apparatus, and is applicable to many kinds of food. The principle involved in this method is the reduction of the water content of the food to prevent it from spoiling. After the moisture is removed, the food product is stored in such a way as to prevent it from absorbing moisture.

General Methods Used In Drying

1. By sunshine, where the food is usually sliced, spread on a suitable container, a piece of mat or a tray being commonly used, and exposed to the sun to dry.

2. By artificial heat, where the material is dried by exposure to the action of hot air in an oven or in a specially constructed drier.

3. By air blast, where the food is dried by means of a fan driven by electricity, alcohol, or kerosene. This method requires about twenty-four hours for drying fruits, and a few hours for drying some vegetables that are not very rich in water content, such as string beans, peas, etc. Foods that are fan-dried should be heated in the oven a few minutes before storing.

Certain apparatus is required in food dehydration, where the food is dried by heated air. This is the best method of all.

B. *Smoking*. — This is a method which is usually used in preserving fish and meat. The food is first salted and then exposed to smoke produced by slowly burning saw dust or shavings of one of the many Philippine woods. The preserving chemicals present in the smoke prevent the growth of bacteria, aided by the drying which generally goes on at the same time.

C. *Salting*. — This method is one of the first known and practiced here. It is applicable to both vegetable and animal foods. When the salt comes in contact with the product the water content is drawn out and the salt enters the tissues, thus making the food firmer and preventing decay. The two most important methods of salting used are —

1. Dry salting, where the food is first mixed with salt to remove a large amount of the moisture and then dried.

2. Brining, where the food is packed in a container and covered with a solution of salt (brine) until used.

D. *Pickling*. (In condiments). — Pickling is usually applicable to foods that do not have much taste in themselves. Pickles are usually preserved with vinegar and condiments. These act as preservatives and at the same time give delicious flavor and odor to the food.

There are two methods of pickling in general use, namely:

1. Simple pickling, where the food is prepared, salted, and preserved with vinegar and other condiments. These ingredients both preserve the food and give it a better taste. Sugar is added to the vinegar when sweet-sour pickle is desired.

2. Fermented pickling is accomplished by curing the food with salt and allowing the lactic acid fermentation to develop for a few weeks.

The following spices are used in these methods: vinegar, black and white pepper, cinnamon, cloves, all-spice, nutmeg, yellow mustard, celery seed, caraway, coriander, cayenne pepper, turmeric, and bay leaves.

E. *Sterilization* — Foods spoil, ferment, or decay because of the growth of living microscopic organisms called germs. These are the molds, yeasts, and bacteria, all plants of very low order. In canning, sterilization (that is, killing or destroying all germs) is most essential and is accomplished by heating. Molds and yeasts are destroyed at, and even below, the temperature of boiling water; but bacteria, due to their spores, are not completely killed by boiling water unless the food containing them is boiled for a long time, say five hours, or else about an hour for three successive days. Since air, water, and food contain germs, complete sterilization is very necessary to assure the preservation of foods.

The few commonly used methods of sterilization are:

1. By cooking the food directly over the fire, then placing it in sterile jars and sealing them hermetically.

2. By boiling water, where the jars containing the food are placed in a boiler, the jars covered with water and the water boiled for a certain length of time, depending on the kind of food to be sterilized.

3. By the use of the air oven, where the food is packed in jars and placed in an oven of carefully regulated temperature. The oven can be heated either by gas or by electricity.

4. By the use of a steam oven. The bottom and sides of the oven are so arranged that the filled jars, covered but not tightly sealed, placed in it to be sterilized come in contact with steam only.

5. By the use of a pressure cooker. The steam pressure cooker consists of a vessel provided with a pressure gauge and safety valve, allowing a pressure of from 5 to 30 pounds, per square inch, to be placed on the sealed jars to be sterilized. This not only completes the process quickly but also cooks thoroughly in a short time vegetables and other foods that, under ordinary conditions, require long boiling.

F. *Sugar*. — The preservation of food with sugar is also common. Syrup in sufficiently concentrated form acts as a preservative and food products can therefore be preserved either in dry sugar or in syrup which is made by dissolving the sugar in water. In both cases where excess sweetness is to be avoided, sterilization, in addition is necessary. When fruits are preserved with much sugar they are known as jelly, marmalade, jam, candy, butter preserve, etc., according to their form and the method of preparation used.

Methods of Canning

There are several methods used in canning, namely:

Cold-pack method: The food is packed in jars or cans, covered with syrup or any other suitable liquid, the cans exhausted until the center reaches a temperature of about 85°C, the jars partially sealed and sterilized completely, and after sterilization sealed completely and then cooled in cold water.

Hot-pack method: The raw material is cooked in an open vessel and immediately packed in sterile jars and sealed completely.

Fractional or intermittent method: Food is packed in suitable containers, sterilized for one hour every day for three successive days.*

Vacuum seal method: Food is packed and sealed in specially-made vacuum containers, generally jars or cans, using special type of machinery to accomplish the sealing. The container is sterilized after sealing. This method is an expen-

* This was a practice in the very early days of canning before pressure processing was introduced. Bacterial spores which survive the initial heat process are allowed to germinate as vegetative cells which are then destroyed by subsequent heating. This is NO LONGER allowed as it compromises the safety of the food and can lead to food poisoning.

sive one and involves special machinery and special type containers.

The most popular of the methods mentioned is the cold pack because it is simple and very convenient. Besides, in the cold pack method, one can arrange the fruit or vegetable attractively in the jar before the products undergo any cooking. The cold pack method is the most widely used not only because it retains the flavor and shape of the fruit or vegetable better, but it has also proved to be the safest. Next in popularity is the hot-pack method. With this method, very little attention can be given to attractiveness in the arrangement of the product in the container since the food is boiling hot when it is transferred to the container. Besides, the fruit has undergone cooking and consequently become greatly impaired in appearance. Small, soft fruits like berries, mash up during the cooking and lose their shape. Aromatic fruits lose part of their flavor when cooked in an open tank.

Authorities in canning agree that fruits and some vegetables retain their flavor better by the cold pack method.

Some factors that influence the quality of a canned product:

The quality of a canned product greatly depends on the quality of materials employed. If a white, clear syrup is desired, only refined sugar should be used. For a uniformly excellent taste and appearance, fruits, used should be of the right maturity, and of uniform size and color. Packing immature fruits with ripe and over-ripe ones will not make for a uniform taste or attractive appearance. Sort the fruits for degree of ripeness as well as for size. Not only will fruits of different sizes look unattractive but the small ones will be overcooked, fall to pieces and mash, making the syrup cloudy, while the large pieces may be undercooked and cause fermentation.

Very few Filipino consumers of canned fruit products are familiar with the different grades of canned goods such as fancy, choice standard, second grade and pie grade. The women buy the brand and perhaps the beautifully-labeled packages. The right kind of containers also influence, to a certain degree, the quality of the canned product. First-class materials packed in cheap, ugly-looking containers will greatly lower the selling property of the product.

* The application of heat sterilization and hot packing without further sterilization is determined by the acidity and available moisture (A_w) or Water activity of the food being processed. Acidity is expressed as pH. Very acidic food with pH of 2.0 to 3.0 such as pickles, and calamansi juice are hot packed. Food items with intermediate moisture such as jams and jellies are also hot packed. Food with pH of 3.1 to 4.5 should be further sterilized in a water bath. Food with still higher pH of 4.6 and above need to be sterilized in a pressure cooker. This includes vegetables, legumes, meat and fish. This is extremely important because food with pH below 4.5 is in danger of *Clostridium botulinum* poisoning unless properly heat sterilized to destroy all spores. Cold packing is applicable to products which are difficult to pack when cooked such as whole langka bulbs. Exhausting is absolutely necessary in this case.

UTENSILS AND MATERIALS

The utensils needed for home canning and the equipment used in semi-commercial and commercial canning widely differ. Since this article is intended to help the homemakers, the home equipment will be discussed.

The following utensils are needed.

1. Stainless steel paring knives
2. Lang handled spoons and ladders
3. Wash pans, aluminum or porcelain lined
4. A measuring cup
5. A set of measuring spoons
6. A colander
7. A dipper
8. A sauce pan
9. A wide mouthed funnel
10. A spatula
11. Pieces of cheese cloth
12. Two holders
13. Hand towels
14. A working table
15. A stove
16. A water sterilizer
17. Preserving cans
18. Preserving jars

CAN SEALER AND CANS, CLEAN WATER, ETC.

A hand can sealer and empty cans are needed if cans are used in preference to glass jars.

A supply of clean water, sugar, salt, and spices are needed in canning fruits and vegetables.

AVOID IRON UTENSILS

The use of iron utensils should be avoided because fruits and vegetables containing acid* will react on the iron imparting a metallic taste to the product and producing a black discoloration.

FOR ACCURACY

For more accurate canning, a thermometer, a balling, baume, cylinder, sacchorometer, salometer and a rough balance are needed.

* The original work identifies tannin as the reacting substance.

KNIVES

The paring and butcher knives should be of stainless steel for ordinary iron knives impart a black color and give a metallic taste to the fruits. Stainless steel knives besides, are easy to clean and to sharpen and are long wearing.

WASH PANS

Wash pans may either be aluminum or enamel lined. The aluminum pans are more expensive than the enamel lined pans but are more durable. The enamel-lined pans chip easily and expose the iron of the pan which discolors the fruits and some vegetables upon contact.

MEASURING CUPS AND SPOONS

Aluminum standard measuring cups and spoons are obtainable from almost all hardwares stores at very reasonable prices.

COLANDERS * *

Colanders are used for draining and blanching fruits and vegetables. There are different types of colanders in the market. Some are porcelain lined and others are of aluminum. Those with a handle are very convenient for blanching and the other type is very suitable for draining. Bamboo baskets may satisfactorily substitute the aluminum or enamel lined colanders. "Bistay" or bithay" and coarsely woven baskets are very satisfactory for draining and blanching fruits and vegetables respectively.

DIPPERS

Dippers are very useful in transferring hot liquids or semi-liquid products from one container to another, such as in transferring boiling syrup or brine from a sauce pan to the jar. Dippers with lip are most convenient to use although coconut shell provided with a handle may be used.

SAUCE PANS

A sauce pan or two are indispensable for the making of the syrup. There are aluminum or porcelain lined pans of different shapes and sizes but those with a flat bottom are

* Plastic basins and bowls were not available then but has now replaced aluminum and enamel basins.

** Plastic and stainless steel colanders as well as aluminum are currently used. Bamboo baskets are not recommended because they are difficult to sanitize.

Sauce pans should be of stainless steel. Tables should also be of stainless steel.

preferred over the others for they do not tip so easily and the loss of heat in cooking is less.

WIDE-MOUTHED FUNNEL

A wide mouthed funnel is important particularly in the preparation of jams, marmalades and preserves by the hot pack method. Wide mouthed funnels are obtainable in almost all hardware stores.

SPATULA

A stainless steel spatula is needed in removing air bubbles after filling the bottle with either fruit and syrup, vegetable and brine, or jam, preserve, or marmalade. This may be substituted with a homemade bamboo spatula which serves the purpose very satisfactorily. The bamboo causes no reactions with fruit juices and does not impart any disagreeable taste to the product. In making a bamboo spatula, use the outer side of the bamboo for it is more durable and could be made as thin as desired.

CHEESE CLOTH

Pieces of clean cheese cloth are needed for filtering the syrup and drying the utensils. They should be washed with soap and water and dried in the sun immediately after each use. Dirty pieces of cheese cloth contaminated with syrup and fruit juices scattered around attract ants, flies, and ordinary flies which make the place very unsightly, and unsanitary.

HOLDERS AND HAND TOWELS

HOLDERS made of pieces of cotton cloth or flannel are needed in holding hot bottles or kitchen utensils. When the jars containing the preserve are sealed completely after sterilization or after exhausting them, these holders are indispensable. Holders should be kept clean and dry.

Hand towels are needed for wiping the hands. Dish towels should never be used for the hands.

WORK TABLE

A work table made of tañguile or lawaan wood is satisfactory. If canning is to be done regularly in the kitchen, a table with shelvings is very satisfactory. The table should

* Stainless steel tables are now recommended.

be of the right height to allow the housewife to work in her natural position instead of stooping if the table happens to be too low, or raising her arms unnecessarily if the table happens to be too high, thus getting tired in a much shorter time than if she worked in her natural position.

STOVE

A gas, electric, coal or wood stove may be used. Many people however, still depend on wood for fuel and a limited few on coal oil, coal, or charcoal. For ordinary canning where a water sterilizer is to be used, a native stove is satisfactory.

WATER STERILIZER

A water sterilizer may be made from any boiler which is high enough to hold the rack and jars in their natural position and allow about an inch space from the top of the water which is supposed to cover the jars to be sterilized. An empty gasoline can* provided with a cover is about the most practical and the cheapest that could be used as sterilizer. It should be provided with a rack made either of bamboo, iron, or wood to hold the jars so they will not come in contact with the bottom of the boiler, as too high heat will cause breakage. The rack should be held far enough from the bottom of the boiler to permit free circulation of water underneath the jars so the heat will not be localized at the bottom of the jar and consequently break it.

The rack should be constructed in such a way that the jars will be held in place during the sterilization period, to prevent them from bumping against each other. It should also be provided with handles so as to avoid the use of bottle holders or bottle lifters. These lifters are long iron tongs especially devised for lifting out bottles.

Failure in canning is sometimes due to defective rubber rings.** Rubber rings should be used only once. Good rubber rings can undergo the following tests: They should stand a few hours boiling; not crease when bent, doubled and pinched; stretch when pulled in opposite directions and return to the original size when force is released; that is, they should be elastic, not stiff.

* Use of non-food containers such as empty gasoline cans are no longer recommended because of possible chemical contamination.

** Current jar closures are now lined with sealing compound replacing the classic rubber gasket. There is however a current popularity of rubber gasket, a presentation of "nostalgia" image.

GENERAL INSTRUCTIONS FOR USING A WATER STERILIZER

1. Place the rack at the bottom of the sterilizer.
2. Place enough cold water in the sterilizer to cover the jars when they are placed on the rack in their normal position.
3. Heat the water to about 85°C* and place the jars on the rack after filling them with fruit and boiling syrup or vegetable and boiling brine.
4. Adjust the water in the sterilizer so that the jars are completely covered.
5. Place the cover on the sterilizer.
6. Continue heating until the water boils.
7. Lower the fire, to keep the water boiling.
8. Count the time of sterilization from the time the water begins to boil.
9. Put out fire after sterilization.
10. Lift rack on which the jars rest or lift bottles individually with a bottle holder.
11. Seal screw jar completely, cool in an inverted position, and examine for leaks.

PREPARATION FOR CANNING IN JARS

Before starting to can, one must be sure that all materials needed are ready and clean.

The surroundings should be clean, dry, and free from dust. There should be an abundant supply of water and fuel. The working table should be scrubbed and dried and on it should be placed the utensils that will be needed for that occasion — pans, spoons, measuring cups, and towels should be ready and within easy reach. The knives must be very sharp. Hot water should be available all the time.

Jars.—Carefully examine and test jars by running the finger around the edge of the neck, sealing shoulder, or the space provided for the rubber ring, depending on the make of the jar, and if any sharp projections are noted, file smooth, for if left sharp they may cut the rubber rings and hence not make a perfect seal. The tops should be tested, those that rock should not be used. Examine for cracks, for a jar with even a small crack will break when hot syrup is poured into it. They should be thoroughly cleaned, and, if canning is to be done by

* Original indicated 40°C which is too low and very much within the temperature danger zone.

the hot pack method, should be completely sterilized before they are used.

The best glass jars are the most economical, for good jars do not break easily and, if properly handled, last indefinitely. There are many kinds of jars in the market. They come in various sizes; namely, gallon jars; quart jars; half-quart, or pint, jars; and half-pint jars. The gallon jars are hardly ever used, because it is difficult to sterilize them. The half-pint jars are also hardly ever used.

The *double seal jar* is a wide-mouthed jar with a glass top that is held in place by a simple wire spring. Failure in canning when these jars are used is mostly due to defective rubber rings. These jars are preferable over others because the tops, being of glass, can be used repeatedly and they last as long as the jars, although much care is needed in handling to prevent them from breaking; the tops of other jars, usually of metal, are easily attacked by the acid in the fruit.

The *mason jar*, usually narrow-mouthed, has a screw top of metal usually lined with enamel or glass, and this makes a hermetic seal when screwed down on the rubber ring. These jars are about the cheapest on the market although, in the long run, they may be very expensive for the tops, being of zinc, easily corrode when they come in contact with the acid fruits and hence need to be changed frequently.

The *removable clamp and glass top* is a glass cover which is pressed down on the rubber ring by the wire clamp as soon as the jar is removed from the boiler or oven. When the jar cools the clamp is removed and the top stays in place because of the vacuum in the jar. Loosening of the top on standing indicates that the contents of the jar are fermenting.

The *jars with metal lacquered tops* do not require rubber rings. Around the edge of the top runs a groove filled with a compound like rubber which, by the heat of the jar during canning, melts and forms a seal, as it hardens on cooling. The clamp is placed while the jar is hot, and removed when cold. A new top is required every time one of these jars is used, as the only way to remove the top is by puncturing it.

Tin cans are employed for canning on a commercial scale, but for home canning glass jars are mostly used for the reason that, although they cost much more than tin, they are cheaper in

the end, for they can be used repeatedly for many years, while the tin cans can be used only once. Another advantage which the glass jars have over the tin cans is that the product inside is seen through the glass, while that in the tin can is not; also, the glass jar is not exposed to the danger of being attacked so that the product inside sometimes turns black, and if sufficient tin is dissolved in the liquor tin poisoning may result from eating the product. The latter disadvantage is partially overcome by using lacquered cans, the lining of which protects the tin from being attacked by the acid in the fruit.

Cans. — If tin cans are used in canning a sealing machine or soldering is essential. At present the hand can sealer is being used in American homes as well as in canning on a small commercial scale. This simple machine is very easy to operate and no solder is required.

Sterilizer — Any one of several vessels may be used as a sterilizer (the vessel that holds the filled jars or cans during the sterilization period); namely a steam-pressure cooker, a steam sterilizer, a simple boiler, or an air oven (gas or electric).

The steam-pressure cooker is provided with a pressure gauge and safety valve and carries from 5 to 30 pounds of steam pressure. There are several types in the market; some are made of aluminum, some of iron. The steam-pressure cooker is very handy to have for home or community canning, for sterilization in this cooker is very rapid.

The steam sterilizer consists of an oven provided with steam, or a doubled-lined oven. The space between the walls is heated by the steam which is generated when the water in the oven boils.

A simple boiler may be a home-made utensil or a boiler with a tight-fitting cover and large and deep enough to hold 2.5 centimeters of water above the jars or cans. A wash boiler is popularly used. The boiler should be provided with a wire or wooden rack to hold the jars, so they will not come in contact with the bottom of the boiler, as too high heat will cause breakage. The rack should be held far enough from the bottom of the boiler to permit circulation of water underneath the jars. The rack should be constructed in such a way that the jars will be held in place during the sterilization period, to prevent them from bumping against each other, and should be provided with handles so as to avoid the use of bottle lifters.

Bottle lifters are long iron tongs especially devised for lifting bottles from boilers.

An electric oven is an air oven heated by electricity. This is hardly ever used, for it is very expensive. The air oven heated by gas is also seldom used, for in canning dry heat is not satisfactory as is moist heat.

Other utensils — The paring knives should be sharp. About three enamel-lined or porcelain wash basins should be provided. Silver knives, silver spoons, and long-handled spoons are also necessary. Plenty of clean towels are indispensable. A large, clean table is very essential. Funnels, both narrow- and wide-mouthed, are necessary—the narrow-mouthed for filtering syrup and the other for transferring the cooked fruits from the open kettle to the jars when the hot-packed method is used.

Plenty of sugar, syrup, salt, or brine should be ready for use.

FRUITS

Handle fruits with care to prevent bruising. The bruised part discolors and softens and must be removed when the fruit is peeled. Unless the fruit, like mango, requires ripening in a room after picking, it should be canned immediately after picking. This insures a better product because generally, fruits rapidly deteriorate on standing at ordinary room temperature.

Fruit for canning should be fully mature and just eating ripe. Overripe fruits soften when heated, lose their shape, and ruin the appearance of the product. Under-ripe fruits shrivel and toughen when heated with syrup and also makes an unsightly pack. Besides, underripe fruits have not developed their maximum flavor and are usually sour.

GRADING

Much importance is given to grading by commercial packers. Highly specialized machines are used for different fruits. If one opens different cans of pineapple for instance, labelled "fancy," "choice," "standard," "second grade" and "pie grade," she will be convinced that there is much difference between the five grades and one who is acquainted with the grading and canning methods employed by the commercial canners will likely patronize the "standard" grade unless the buyer has a special use for the fancy and the choice for which

she pays more than for the standard. For the information of the buying public that patronize the U.S. canned goods which we yearly import in very large quantities, the following specifications for different grades adopted by the California Cannery League and which are also recognized by other canners in California are quoted below:

For home canning, it is suggested to sort and grade the fruits into 3 grades:

1. Fancy, which consists of the largest fruit, uniform in size and in degree of ripeness, free from blemishes, and symmetrical.

2. Standard, which consists of the next best to fancy.

3. Pie, which are neither fancy nor standard. Since pie is not very commonly made here, the pie grade fruits may be used for jams, jellies, marmalades, butters, preserves, juices, and syrups.

The importance of grading fruits in canning cannot be over-emphasized. It insures a uniform pack and flavor, and commands a better price. Besides, as already stated, if fruits are not graded, very ripe fruits packed with under ripe fruits become very much softer than the under ripe ones and small sized fruits packed with large ones get mashed with the large ones which may not be well cooked during the process of sterilization. Even for home canning, sorting and grading should be observed for this is a means of removing bruised and over-ripe fruits, generally loaded with all kinds of micro-organisms which need to be killed in the sterilization process and which, in addition to their bad appearance, lengthen the sterilization period.

BLANCHING

Some fruits and vegetables are easily peeled after blanching. To blanch the fruit or vegetable, place in boiling water for a few minutes, then immerse in cold water. This process loosens the skin of some fruits and makes it easy to remove. The period required for blanching depends on the kind of fruits. Tomatoes and beets are easily peeled after blanching.

Blanching has different functions for different fruits and vegetables. For some, it causes the food to shrink, so that a larger quantity may be packed in the container. This is true in the case of leafy vegetables like alogbati, pechay, and cab-

bage. In some cases, blanching removes the bitter taste, as in asparagus. It sometimes coagulates the substance that oozes out when peeled with a knife (as in the case of santol and rimas) a milky substance which turns the color of the peeled fruit brown. Blanching prevents this discoloration. In some cases, blanching swells the product as in the case of beans. In all cases blanching partially removes the microorganisms present in the fruit.*

STEMMING AND WASHING

There are some fruits that are ready to pack after stemming and washing. This is true of small fruits like strawberries, siniguelas, galo, and others.

Washing fruits and vegetables in large canneries is accomplished by the use of specially devised machines made to suit the different fruits and vegetables. Washing fruits for home canning is satisfactorily accomplished by placing the fruits in a basket or a colander, dipping the basket several times in a bucket containing soap water and rinsing it in bucket containing clean water. Or, by placing the basket under a faucet and letting enough water pass through the basket containing the fruit. Since all large fruits like condol and nangka have to be peeled, often times there is no need to wash the fruits unless they are full of dust or dirt. A hand brush is recommended in cases when the fruit is dirty and needs a thorough washing.

PEELING

Peeling is usually accomplished by the use of a knife. Stainless steel knife must be used to prevent discoloration. It must be sharp when used. Peeling may also be accomplished after blanching the fruit. In blanching, the skin loosens and may easily be peeled with the finger. Some fruits that are thin skinned may be peeled with lye. Guavas and santol are very satisfactorily peeled by the use of hot lye solution. Peaches, apricots, quinces are peeled in large canneries in the U.S. with lye. Vegetables like carrots and sweet potatoes are also peeled by the use of boiling lye solution from 1% to 3% strength, and from a few seconds to about 2 minutes, depending on the kind of fruit or vegetable peeled.

* The browning reaction in such fruits as santol are now known to be due to polyphenol oxidases, enzymes naturally present in the fruit which react with oxygen to produce darkening. Blanching destroy these enzymes thus preventing browning

Peeling by the lye method is a time saver and is economical because it removes the peeling only and not a part of the pulp as in the case of knife peeling. Besides, the fruits peeled by this method is rendered very smooth and attractive. In peeling fruits with lye, the fruit should be dropped in a very hot or boiling solution of lye and immediately removed when the peel darkens. Then the fruit is placed immediately in a pan of water and skinned by hand. It is more desirable to place the fruit under a spray. One must be sure that no trace of lye remains in the fruit for it imparts a very peculiar taste and ruins the desirable flavor. In the absence of lye, santol may be peeled with a knife. The guarded knife is suggested for it peels more economically and smoothly than an ordinary knife.

Some canners use a mixture of sodium hydroxide and sodium carbonate solution. This is a weaker peeling solution than the pure lye solution.

Cutting the fruit is accomplished by the use of a sharp, long butcher knife. Large fruits like rimas, condol, green papaya and guayabano may be cut with an ordinary butcher iron knife. Mango should be cut with a stainless steel knife. Nanka should be cut with a knife previously rubbed with a cloth dipped in oil (any oil that is odorless and tasteless will do). Cutting may also be accomplished by using some specially devised cutters which give an artistic shape to the pieces of fruit.

In cutting the fruit the size of the container should always be considered. It is not wise to cut the fruit in pieces too large to pack in the jar. Likewise, precautions should be taken when packing in large containers like the half gallon and gallon sized jars which need a much longer sterilization periods, so the pieces should not so small so that they lose their shape after sterilization.

SYRUP

Syrup is a solution of sugar in water. Cane and beet sugars are the commonest sugars used in canning fruits either commercially or in the homes. Syrup added to fruit packed in cans or jars perform several functions namely; it improves the flavor of the fruit particularly acid ones; conserves their natural flavor, aids in fixing the color of fruits that have a tendency to be bleached by tin if packed in cans, toughens the

tissues of the fruit so that it stands heating better, fills the interstices packing the jars or can more completely, masks in some respects the metallic taste produced from the action of acid contained in the fruit on the iron of the can, serves as a cushion for the pieces of the fruit, thus preventing the pieces to jam during transportation, helps to exclude the air, and aids in the transfer of heat during sterilization.

Syrups — Fruits are usually canned with syrup. The strength of the syrup used in fruit canning largely depends on the acidity of the fruit, on the quality of fruit used, and on the quality of canned product desired. Sweet fruits require a thicker syrup than standard grade fruit for standard pack. Syrup may be made by either mixing the sugar and water, bringing the mixture to a boil and filtering to remove whatever foreign material may be present, or by adding sugar to hot or boiling water, stirring until the sugar is dissolved, and filtering through a piece of clean muslin or cheese cloth. In commercial canning, the usual way is to make a concentrated syrup with water and sugar in large porcelain or glass lined jacketed kettles or tanks drawing a certain amount of this syrup to another tank were enough water is added to produce the desired density. For home canning, thin, medium, thick and very thick syrups are used. These syrups will hereinafter be referred to by number, namely, 1, 2, 3, and 4. The quantities of sugar and water to make the syrup are as follows:

No. 1 thin — 1 cup sugar plus 3 to 4 cups water

No. 2 medium — 1 cup sugar plus 2 cups water

No. 3 thick — 1 cup sugar plus 1 cup water.

No. 4 very thick — 2 cups sugar plus 1 cup water

The water used in making syrups should be clean, and free from microorganisms that may cause spoilage and from minerals that may react with the fruit thus producing discoloration, precipitation or clouding. The sugar used must also be of a good quality; otherwise, the syrup will be cloudy and may impart a taste of molasses to the products. Brown looking pack, and the molasses taste will be conspicuously noticeable.

Soft water is preferred to hard water which generally contains carbonates, iron, or sulphur compounds which may cause clouding, discoloration, and precipitation.

Sugar for syrup making should be sifted and transferred to the measuring cup lightly. Packing should be avoided. A

spatula or any similar utensil with a straight edge may be used in labeling the cup.

Brine.— Brine is made by dissolving salt in water, and then boiling and filtering the solution. From 2 to 5 per cent brine is used in canning vegetables. Brine is also used in preparing some fruits for canning which turn brown immediately after peeling.

Steps in Canning

1. Prepare the fruit; that is, sort, wash, blanch, peel, and slice (if necessary).
2. Pack in jars or cans.
3. Add hot syrup.
4. Put tops in place and half seal.*
5. Sterilize; see Table 1 for sterilization period and calculate from the time the water begins to boil.
6. Remove from sterilizer.
7. Seal tightly
8. Invert jars and cool.
9. Clean outside of jars and affix label.
10. Store in a cool, dark, dry place.

TABLE 1 — Time table for sterilizing quart jars. **

(For pint jars or for 1 to 1.5 pound cans, deduct 5 minutes)

Balimbing, whole	30	25	12
Balimbing, halved	25	20	10
Breadfruit, or rimas	35	30	15
Chico, whole	30	25	12
Chico, halved	25	20	10
Galo	35	30	15
Guava, or bayabas	30	25	12
Guayabano	35	30	15
Hevi	30	25	12
Huani, sliced	25	20	10
Kaki (Pagatpat)	30	25	12
Karanda or carissa	25	20	10
Katuri	30	25	12
Ketembilla	25	20	10
Lanzon	25	20	10
Mabolo	25	20	10
Makopa	35	30	15

* Half sealing allows water to get inside. Apparently, the intention is to drive out all air which is however not necessary if temp. of syrup is 85°C.

** Time temperature process protocol need to be verified by heat penetration studies. pH and water activity of the product need to be tested prior to recommendation of process time to make sure the product is safe.

** If the temperature of the syrup in the jar is less than 85°C, the jars need to be exhausted by heating without the cover. When the right temp. is achieved. Check the head space, adding more syrup if necessary then seal completely. Half sealing in the boiling water bath will allow water to enter the jar and dilute the syrup.

** Mango, whole	35	30	15
** Mango sliced	25	20	10
Mangosteen	25	20	10
Nanka (Jackfruit)	30	25	12
Paniala	30	25	12
* Papaya	25	20	10
Piña, or pineapple	40	35	17
Santol, whole	35	30	15
Santol, quartered	30	25	12
* Siniguelas	35	30	15
* Sinkamas	30	25	12

If the fruits are too large to be put in jars or cans, slice or cut them into smaller pieces. Then pack carefully up to the neck of the jar or, if cans are used, to about 6 centimeters of the top. If jars are used, adjust the rubber rings, then pour hot syrup until all the interstices are filled and add more syrup until the jar is full. The jars are then half sealed; that is, in case of screw tops, the tops are screwed loosely, and in case of doubled-seal jars, they are half sealed, sterilized in the sterilizer, and then taken out. The jars are then tightly sealed and inverted to insure sterilization of the tops, cooled, cleaned, and labeled with the name of the fruit. The jars are stored in a cool, dry, dark place. Light sometimes decolorizes the fruits. If the jars are to be sterilized in a wash boiler they should be placed on the rack and enough water be put in the boiler to cover the jars, 2.5 centimeters from the top of the jars. The boiler is then tightly covered or, better still, a piece of cloth is spread on top of the boiler before the cover is adjusted, so as to prevent the escape of steam. If cans are used the can is filled with the fruit and enough boiling syrup added to fill it full; the can is then sealed hermetically with a can sealer, and sterilized. When cans are used the sterilizer commonly used is the pressure cooker, although boiling water or a steam oven is very satisfactory when the products to be canned are fruits.

Detailed Instructions for Canning Special Fruits

Mango — Use the ripe fruit only, not overripe; remove the seed with a sharp knife; remove the pulp from the skin with a silver spoon, trying as much as possible to make the pieces uniform in size; pack in jars or cans; pour hot syrup No. 2 to fill the container; run a knife under the edge of the

* Low acid products such as jackfruit, papaya and singkamas need to be processed in a pressure cooker.

** For ripe mangoes it is necessary to add acid such as citric acid or an acidic juice such as calamansi juice to the syrup. This will ensure that the pH of the pack is below pH 4.5. pH 4.5 is the limiting pH and food with higher pH need to be pressure processed to be safe from *Clostridium botulinum*.

container to remove air bubbles; jars should be half sealed, and cans completely; sterilize. Remove jars from sterilizer and immediately seal tightly; invert jars and cool. Do not put jars in a draft, for this will break them. When cool, wipe the outside of jar with a wet cloth, then with a dry one; label, and store in a dry, cool, dark place.

If mangoes are to be canned whole, peel and pack in jars; pour in hot syrup No. 2 and sterilize (consult Table 1 for sterilization). Whole mangoes require a longer time for sterilization than sliced. Follow directions given above.

If the mangoes are very sweet use syrup made in the proportion of 1 cup sugar to 3 cups water.

Lanzon — Local names, bulahan, buan, kalibongan, lanzones. Peel the fruits with the fingers and separate the segments; drop in weak brine (about 5 per cent) to prevent them from turning brown; remove the seed from each segment and wash thoroughly with cold water until all salt is removed. Pack in jars or cans and add syrup No. 2; sterilize (see Table 1). Follow the rest of the instructions given under Mango.

Canned lanzones turn light brown on standing. This discoloration can be partly overcome by using colored jars or by storing the jars in a dark place.

Piña, or *pineapple*. *Peel about 3 centimeters thick; remove eyes with the point of a sharp knife; cut into squares or into any form desired, taking care that the slices are uniform; wash thoroughly in cold water. Pack in jars or cans and add syrup No. 3, sterilize (see Table 1). For further directions, see Mango.

Santol. — Boil 3 minutes, peel as thin as possible with a sharp knife. If the santols are to be canned whole, prick with a pin and soak in rice washing overnight; then wash with water to remove all the rice washing. Boil in plenty of water for about 2 minutes. Drain and squeeze each fruit to remove most of the water. Pack in colored jars, add hot syrup No. 3, half seal and sterilize. For the rest of directions, see Mango.

If the santol fruits are to be canned without the seeds, blanch 3 minutes; peel; cut into quarters; remove seeds; soak in rice washing overnight; wash off rice washing with water; boil 1 minute in water; drain and pack in colored jars; fill jars

* Original process indicated blanching whole fruit prior to peeling. This has been since found to be unnecessary.

with hot syrup No. 3 and sterilize. Remove the jars from the sterilizer and seal completely.

Colored jars are preferred over white ones because the santol becomes brown on standing if kept in white jars.

Guava. — Blanch the ripe fruit for 2 minutes; peel thin; if to be canned whole, prick with pin; drop the peeled, pricked fruit into a pan of cold water. Drain and pack in jars and add hot syrup No. 3; sterilize (see Table 1). For further directions, see Mango.

If the guava is to be canned sliced, blanch for 2 minutes; peel; cut into halves; remove seeds; pack in jars and add syrup No. 3; sterilize (see Table 2). For further directions, see Mango.

Papaya. — Local names, kapaya, papias, tapayas.

Peel the ripe papaya and wash in cold water; cut open and remove the seeds with a spoon; cut into small pieces as desired; pack in jars and add syrup No. 2 sterilize (See Table 1). For further directions, see Mango.

Chico. — Sort the fruits and can only the ripe ones. Blanch 2 minutes; peel and cut into halves; remove seeds; boil in water for 4 minutes; drain and wash with cold water. Pack in jars and add syrup No. 2; sterilize (See Table 1). For further directions, see Mango.

If the chicos are to be canned whole, blanch; peel; boil for 5 minutes; wash in water and drain. Pack in jars and add syrup No. 2; sterilize (See Table 1).

Nanka, or jackfruit. — Open the fruit and separate the segments; remove the seed from each segment. Pack the segments in jars and add syrup No. 2; sterilize (See Table 1) For further directions, see Mango.

Mangosteen. — Sort the fruits and use only those that are soft enough to be opened by hand; open the fruit and separate the snow white pulp. Pack in jars and add syrup No. 3; sterilize (See Table 1). For further directions, see Mango.

Guayabano. — Pare the mature but not too ripe guayabano, cut into squares, and remove the seeds. Pack in jars and add syrup No. 3; sterilize (See Table 1). For further directions, see Mango.

* Use firm ripe papaya. All fruits should be checked for pH. If above 4.5 the packing syrup should be acidified to bring equilibrated syrup to pH 4.0 to 4.2. If not acidified an equilibrated syrup concentration of 65° Brix should be used. This high sugar concentration provides a lowered water activity (Aw) which will inhibit the germination of *Clostridium botulinum* spores as does pH of 4.5 and below.

Breadfruit.—Blanch 5 minutes; peel the ripe breadfruit with a knife and cut it into small pieces, as desired; wash; drain; boil slowly with syrup No. 3 in an open kettle for about 15 minutes; drain the syrup into another vessel and pack the boiled pieces in the jars. Add syrup No. 3 and sterilize (see Table 1). For further directions, see Mango.

Mabolo.—Sort and blanch 2 minutes; peel; cut into quarters; remove seeds. Pack in jars and add syrup No. 3; sterilize (see Table 1). Continue as with Mango.

Cashew (Kasoy).—Use fruit only. Take out the beanshaped seed, using the fingers. Wash the fruit thoroughly; blanch 3 minutes; pack in jars; add hot syrup No. 3 and sterilize (see Table 1). For further directions, see Mango.

Siniguelas.—Select the mature but not ripe fruits; remove the stems; wash; blanch 2 minutes; pack in jars and add hot syrup No. 3; sterilize (see Table 1). For further directions, see Mango.

Makopa.—Sort the fruits and use the ripe ones only. Wash thoroughly with water and blanch 2 minutes. Pack in jars and add hot syrup No. 3; sterilize (see Table 1). For further directions, see Mango.

Kamanchile.—Take the fruit from the pod and remove the seeds. Pack in jars; add syrup No. 3 and sterilize (see Table 1). For further directions see Mango.

Galo.—Boil for about 3 minutes. Drain; pack in jars; and syrup No. 3 and sterilize (see Table 1). For further directions, see Mango.

Pagatpat.—Sort the fruits blanch 2 minutes and peel. Cut into halves if desired and pack in jars. Add syrup No. 2 and sterilize (see Table 2). For the rest of directions, see Mango.

Balimbing.—Prick with a pin and boil for a few minutes with plenty of water in a copper kettle. Drain the water and next boil the fruit with syrup No. 2 in a copper kettle until the fruit becomes green again. Then pack the fruit in jars and add syrup No. 3. Sterilize (See Table 1). For further directions, see Mango.

Huani.—Since huani is very similar to mango, follow the directions under Mango.

Tabo. Coconut embryo. — Sort according to size and use in jars and add syrup No. 3. Sterilize (see Table 1). For further directions, see Mango.

*Hevi.*² — Use the ripe fruits only. Peel with a knife; cut into desired slices; pack in jars and add syrup No. 3. Sterilize (see Table 1). For further directions, see Mango.

*Ketembilla.*² — Sort and use ripe fruits only. Blanch one minute; peel and pack in jars. Add syrup No. 4 and sterilize (see Table 1). For further directions, see Mango

*Carrisa.*² — Use ripe fruits. Wash and pack in jars. Add syrup No. 3 and sterilize (see Table 1). For further directions, see Mango.

*Katuri.*² — Use ripe fruits only. Blanch 2 minutes; peel and cut into quarters. Boil in plenty of water for about 5 minutes; then boil in syrup No. 3 for 10 minutes. Allow it to stand overnight in the same syrup. Drain and pack in jars. Add syrup No. 4 and sterilize (see Table 1). For further directions, see Mango.

*Malpi.*² — Blanch the ripe fruit; pack in jars and add syrup No. 3. Sterilize (see Table). For further directions, see Mango.

Saba banana.^{*} — Use the ripe fruits. Boil for about 10 minutes. Peel and pack in jars; add syrup No: 3 and sterilize (see Table 1). For further directions, see Mango.

Sweet Potato.^{**} — Scrub with a brush and boil in a small amount of water until done. Peel and cut into pieces of uniform size. Pack in jars and add syrup No. 3. Sterilize (see Table 1). For further directions, see Mango.

Gabe. — Follow directions under Sweet Potato.

Ube. — Follow directions under Sweet Potato.

General Instructions for Making Jams

Peel the ripe fruit and mash until it is reduced to fine pieces or pulp; add from 500 to 100 per cent of its weight of sugar and cook until thick.** Transfer to sterilized jars while boiling hot and seal tightly.

² These are foreign fruits now growing at Lanao Experimental Station of the Bureau of Agriculture.

* Equilibrate to 65° Brix syrup then add 65° Brix syrup as packing medium. Equilibrate to 65° Brix syrup before processing in a water bath.

If syrup concentration is below 65° Brix process in a pressure canner, 15 lbs. pressure.

** End point of cooking is determined by the amount of soluble solids which can be done with a refractometer to read 68° Brix or a thermometer to read 104-105°C (219-221°F), or a sheeting test.

Mango jam.— Peel the ripe fruit remove the seed; mash and to ten cups of the pulp, add 6 cups of sugar. Cook until thick and while boiling hot transfer to well sterilized jars and seal jars tightly.

Papaya jam.— Peel the ripe fruit and wash; open and remove all seeds; mash. To 10 cups of the pulp add $1\frac{1}{2}$ cups of sugar. Boil until thick. A few slices of lemon added while cooking will improve the flavor. Transfer while hot to well-sterilized jars and seal hermetically.

Pineapple jam.— Peel and remove eyes. Cut into pieces and boil until soft with a very small amount of water. Pass through a food chopper and to 10 cups of the pulp add $7\frac{1}{2}$ cups of sugar. Cook until thick and while hot transfer to well-sterilized jars. Seal tightly.

Lanzon jam.— Peel and separate the segments. Remove the seeds and cut into fine pieces. To 1 cup of the pulp add $\frac{3}{4}$ cup of sugar. Cook until thick. Transfer while hot to well-sterilized jars and seal hermetically.

Guanabano jam.— Peel the ripe fruit and remove the seeds. Pass through a meat grinder. To 1 part of the pulp add 1 part of sugar and boil until thick. Pack while hot in well-sterilized jars and seal tightly.

Jackfruit jam.— Open the fruit and separate the segments; through of food chopper. To one cup of the pulp add $\frac{3}{4}$ cup of sugar and boil until thick. Pack in well-sterilized jars and seal tightly.

Papaya-Orange jam.— Peel the papaya; remove the seeds and pass through a food chopper. Boil the pulp 5 minutes. To each cup of boiled papaya add 1 cup of mandarin³ juice, 1 teaspoon of grated peel, and $\frac{3}{4}$ cup of sugar. Boil until thick and clear. Pack while hot in well-sterilized jars and seal tightly.

Papaya-Guanabano jam.— Prepare the papaya pulp as for papaya jam prepare the guanabano pulp as for guanabano jam. To each cup of papaya pulp add 1 cup of guanabano pulp and $1\frac{1}{2}$ cups of sugar. Boil until thick; pack while hot in well-sterilized jars and seal tightly.

³ Naranjita.

Papaya-Pineapple jam. — Reduce the ripe papaya to a fine pulp and to each cup add one cup of pineapple that has been cut into very fine pieces. Add $1\frac{1}{2}$ cups of sugar and boil until thick. Pack in well-sterilized jars and seal tightly.

Tamarind jam. — Select the ripe tamarind. Peel and soak overnight in plenty of water. Drain and put the soaked tamarind in a piece of coarse sinamay and squeeze until all the pulp has come out. To each cup of tamarind add 1 cup of sugar and boil until thick. Pack in well-sterilized jars and seal tightly.

Papaya-Tamarind jam. — To each cup of papaya pulp add $\frac{1}{2}$ cup of tamarind pulp and $1\frac{1}{2}$ cups of sugar. Boil until thick; pack in well-sterilized jars and seal tightly.

Mango-Orange jam. — To 1 cup of mango pulp add $\frac{1}{2}$ cup of orange juice and 1 cup of sugar and boil until thick. Pack in well-sterilized jars and seal tightly.

Tubo-Mango jam. — Pass the tubo through a food chopper and boil for 5 minutes. To each cup of tubo add $\frac{1}{4}$ cup of mango 1 cup of sugar and cook until thick. Pack in well-sterilized jars and seal tightly.

Tubo-Guanabano jam. — Pass the tubo through a food chopper and boil for 5 minutes. To each cupful add $\frac{1}{2}$ cup of guanabano pulp and $\frac{1}{4}$ cups of sugar and boil until thick. Pack while hot in well-sterilized jars and seal tightly.

Tubo-Jackfruit jam. — Follow directions above, using $\frac{1}{2}$ cup of jackfruit instead of guanabano, and add 1 cup of sugar instead of $1\frac{1}{4}$.

Tubo-Orange jam. — Pass the tubo through a food chopper and prepare the orange as follows: Peel orange and separate the segments. Remove the seeds and white covering of each segment. Use the remaining pulp. To each cup of tubo and 1 cup of orange pulp and $1\frac{1}{2}$ cups of sugar. Boil until thick; pack while hot in well-sterilized jars and seal tightly.

Chico jam. — Peel the fruit and cut into quarters. Remove the seeds and mash the fruit until it is reduced to fine pieces. To 1 cup of chico pulp add $\frac{3}{4}$ cups of sugar and boil until thick. Pack while hot in well-sterilized jars and seal tightly. Small amounts of nutmeg, allspice, and cinnamon will improve the flavor.

Guava jam.—Use the ripe fruits only. Peel and mash the fruit. To 1 cup of the pulp add 1 cup of sugar. Boil until thick; pack in well-sterilized jars and seal tightly.

Rimas jam. — Use the ripe fruit. Wash and boil the whole fruit until soft. Peel and mash. To each cup of the pulp add $\frac{3}{4}$ cup of sugar and boil until thick. Pack in well-sterilized jars and seal tightly.

Rimas-Orange jam. — Wash the ripe fruit and boil until thick; mash and to 1 cupful add $\frac{1}{2}$ cup orange juice, 1 teaspoon grated orange rind, and $1\frac{1}{4}$ cups sugar. Boil until thick; pack in well-sterilized jars and seal tightly.

Saba jam. — Boil the ripe banana until thick. Pack in well-sterilized jars and seal tightly.

Guanabano-Orange jam. — Peel the ripe guanabanó and remove the seeds. Pass through a food chopper. Peel the orange and separate into segments. Remove seeds and white covering of each segment and use the pulp only. To each cup of guanabano pulp add 1 cup of orange pulp, 1 tablespoon of grated orange peel, and 2 cups of sugar. Boil until thick; pack in well-sterilized jars and seal tightly.

Jackfruit-Orange jam. — Open the fruit and separate the segments. Remove seed from each segment and pass the segments through a food chopper. To each cup of the pulp add 1 cup of orange, 1 tablespoon of grated orange peel and $1\frac{1}{3}$ cups of sugar. Boil until thick; pack in well-sterilized jars and seal tightly.

General Instructions for Making Jellies

Jelly is a fruit product prepared by expressing the juice from the boiled fruit, boiling with sugar, and cooking to such consistency that gelatinization takes place on cooling.

A good jelly must gelatinize on cooling and retain the shape of the container when removed. It must be soft but must not flow, and soft enough to quiver on shaking. It must be clear and transparent and should retain the flavor of the fruit.

Jelly can be made only from fruits rich in pectin and acid, although it is also made from other fruits containing less pectin or acid, by adding commercial pectin, or pectin prepared at home, or the juice of other fruits rich in acid and pectin such

as apple, santol, paniala, or bignay. The presence of acid is just as essential as pectin in jelly making, as it has been found that sweet fruits rich in pectin will not "jell" without the addition of other juices that are rich in acid. Sweet guava, peach, and quince are examples.

Pectin is a substance belonging to the carbohydrate group. It is usually called vegetable jelly. It is found in many fruits, especially in mature or just ripe fruits. It is extracted as variously colored translucent substance which dissolve in hot water and become viscous on cooling.

Some of the American fruits that are rich in pectin are sour apples, crab apples, under-ripe grapes, quinces, cranberries, raspberries, blackberries, blueberries, wild cherries, and green gooseberries.

The Philippine fruits that are rich in pectin so far found are guava, santol, bignay, duhat, green tamarind, ketembilla, lipoti, carissa, and paniala.

If commercial pectin is unobtainable pectin can be prepared at home by the following method:⁴

Grate all the yellow rind off the orange fruit; cut off the remaining white peeling, and run it through the meat grinder. Weigh it, and to each 1.1 kilograms add 3 cups of cold water and 3 tablespoonfuls of lemon juice. Mix thoroughly and set aside for 4 hours. Then boil it for 10 minutes. When it is cooled, add another 3 cups of cold water, bring it again to the boiling point, and then let it stand overnight. The next morning, boil a third time, for 5 minutes. Cool, and strain through a jelly bag. Use one cupful of this orange pectin to each cupful of the fruit juice, and add only 1 cup of sugar for this amount.

Preparation of powdered pectin. — Make a jelly from apples or equal weights of lemons and oranges and concentrate. Cool, and add the concentrated juice slowly while stirring to twice its volume of 95 per cent ethyl (grain) alcohol. Separate the alcohol from the pectin by draining through a muslim cloth and pressing. Dry at room temperature on a screen. Dissolve the dried pectin in a small amount (about 150 cubic centimeters) of water and strain through a cloth. Add the pectin solution to twice its volume of ethyl alcohol and separate the

⁴From Successful Home Canning and Jelly Making Extension Service of the College of Agriculture, University of Wisconsin, Madison, p. 22.

precipitate by straining through muslin. Dry at a temperature of 120° to 130° F. Grind in a mortar to a powder. Store in a corked bottle.

Apple Pectin.

1 pound apples.

Juice of 1 lemon.

4 pints of water.

Boil for one-half to three-fourths of an hour, place the juice in a heavy flannel bag, and allow the juice to drain without pressure. After bottling and sterilizing for 15 minutes in water it can be kept until needed for jelly making.

*Preparations for Jelly Making**—It is the safest rule to test the fruit for pectin content before proceeding to jelly making because the amount of sugar that is to be added has much to do with the pectin content. More sugar may be allowed to fruit juices rich in pectin than to those not so rich.

How to Test for Pectin Content—From the juice of the fruit that has previously been boiled and filtered, draw off about 10 cubic centimeters, or about one teaspoonful, and transfer to a test tube (or a glass, if a test tube is not available) and to it add an equal amount of 95 per cent alcohol. A precipitate will appear, the amount of which indicates the pectin content of the fruit juice. A small amount of precipitate indicates that the juice is poor in pectin. The presence of a few large pieces of gelatinous precipitate indicates that the juice is rich in pectin. The absence of precipitate indicates the absence of pectin.

The simplest test for acidity is to taste the juice; a surer method, however, is to titrate an aliquot portion of the juice with a standard solution of alkali.

In addition to the utensils mentioned for canning fruits the following are necessary: jelly glasses, paraffin, and muslin bags.

Fresh fruits should be used and they should have been picked not longer than 24 hours before cooking. Just ripe or slightly underripe fruits are best, for at this stage they are rich in acid and pectin.

* pH of 3.3 - 3.5
syrup of 65-68%
pectin 1%

Steps in Jelly Making

1. Extract the pectin. Since pectin is soluble in hot water, cut the fruit into small pieces, add a small amount of water, and boil until soft.

2. Express the juice. If preparing a large quantity, express the boiled fruit and place the juice in a pan. Let it stand overnight. Filter the next morning. If making only a small amount of jelly put the boiled fruit in the muslin bag and hang it where it will drip overnight.

3. Test the juice for pectin and acid, using the test already described.

4. Add to the clear juice clean sugar, previously warmed in an oven, in the following proportion:

(a) If the juice is rich in pectin add 1 cupful to 1 cup of sugar.

(b) If the juice is moderately rich in pectin add 1 cupful to $3/4$ cup of sugar.

(c) If the juice is poor in pectin add 1 cupful to a half-cup of sugar.

(d) If the juice is still poorer in pectin, boil and concentrate until the test for pectin content is satisfactorily positive.

5. Boil the mixed sugar and juice, skimming from time to time, until the "jelling" point is reached. If the juice is overboiled the pectin is broken down to pectic and other acids and therefore loses its power of gelatinizing.

(a) Dip a spoon into the pan containing the juice and sugar. Hold it up and let the juice drip. When the juice drops in a mass from the side of the spoon, or if it drops in flakes, the "jelling" point is reached.

(b) Drop the juice in a saucer containing cold water; when the drops do not change and melt, the "jelling" point is reached.

(c) Dip a thermometer in the boiling juice. When the jelly boils at 212° F., the "jelling" point is reached.

6. Filter the boiling juice through a few thicknesses of gauze.

7. Fill the jelly glasses or jars with the filtered juice and let them stand to cool.

8. Melt paraffin in a pan. Run the point of a knife around the inner edge of the glass, loosening the jelly about 6 millimeters from the top; then pour over it hot paraffin to cover.

9. Place the tin cover over the jelly glass and label the glass.

10. Store in a cool, dry, and dark place. A second and a third extraction of juice may be made by reboiling the pulp with a small quantity of water and concentrating the juice before sugar is added.

Santol jelly. — Wash and blanch recently gathered, just ripe, or underripe santol; cut into small pieces; put in a pan and add just enough water to cover the produce; boil until soft; squeeze the juice out and allow it to settle; filter juice through a muslin bag; test for pectin content; measure the juice and add recently heated sugar in the proportion of 1 to 1; boil, skim, and determine "jeeling" point; when this point is reached, transfer to jelly glasses and let cool. Pour melted paraffin over it and place the tin cover; label and store.

Guava jelly. — Wash and blanch mature but not ripe guavas; cut into small pieces and boil in a small quantity of water until soft; transfer to a muslin bag and let it drip; test for pectin and add the right amount of sugar (1 to 1); boil, skim, and determine "jeeling" point; filter, and fill jelly glasses. When cool, pour melted paraffin and place the tin cover; label and store.

Ripe guavas are usually rich in pectin but low in acid. If low in acid, add some juice of an acid fruit or some citric or tartaric acid (3 per cent).

Bignay jelly. — Stem and wash just ripe bignay berries and follow general directions. The proportion of sugar to juice is 1 to 1.

Paniala jelly. — Stem and wash; blanch 1 minute, cut into small pieces, and follow general directions. The proportion of sugar to juice is 1 to 1.

Guava-Santol jelly. — Follow the general directions. Use equal parts of sugar and juice.

Tamarind jelly. — Peel the ripe tamarind and soak in plenty of cold water overnight; drain and pulp; remove the seeds; put

the pulp in a pan with a small quantity of water; add some apples, cut into small pieces (three apples to 1 kilogram of pulp); boil for about 30 minutes; strain and to the strained juice add an equal amount of sugar; boil and follow general directions.

Mabolo jelly.— Boil together 4 parts of mabolo and 1 part of green tamarind in a very small amount of water. Express the juice and measure. To each cup of the juice add $\frac{3}{4}$ cup of sugar and follow general directions.

Papaya jelly.— Follow instructions under Mabolo jelly, using ripe papaya instead of mabolo.

Chico jelly.— Follow instructions under Mabolo jelly; using ripe chicos instead of mabolo.

Duhat jelly.— Boil the ripe fruit with a small amount of water and express the juice. To each cup of the juice add 1 tablespoon of lemon juice. To each cup of the mixed juice add 1 cup of sugar and boil until the jelling point is reached. Follow general directions for jelly making.

Makopa jelly.— Boil the washed makopa with a small amount of water. Transfer to cheesecloth and squeeze out the juice. To each cup of juice add 2 tablespoons of lemon juice and 1 cup sugar. Boil the mixture until the jelling point is reached. Follow general directions.

General Instructions for Making Marmalades

Marmalade is jelly in which slices or fruit or peelings are suspended. The general directions for jelly making already given will also apply in making marmalade, except that slices or pulp, and sometimes the peelings of the fruit, are included. Seeds should be discarded.

Orange marmalade (slightly bitter).— Peel the oranges and slice the peelings into very thin pieces of about 2.5 to 3.75 centimeters in length; boil in a kettle in plenty of water until tender; drain off the water; pulp the peeled orange and pass through a sieve; add the peelings and 1 of pulp and peelings; boil to the right consistency, as in jelly.

Orange marmalade (sweet).— Follow the preceding instructions, but soak the sliced peelings in strong brine solution (about 20 to 30 per cent) overnight and wash thorough next morn-

ing until the salt has been washed off. Soaking the peel in brine removes the bitter taste.

To be sure that all the bitterness will be eliminated, take a very sharp knife and peel off as thin as possible the outer part of the rind of the orange. Then separate the peel from the pulp and cut into thin slices, about $1\frac{1}{4}$ inches long. Boil with water for about 3 minutes. Drain and boil again water; drain and squeeze out the water.

Mandarin marmalade. — Cut as thin as possible the outer part of the rind. Cut the fruit into quarters. Peel off each quarter and cut the peelings into very thin slices, about 1 to $1\frac{1}{4}$ inches long. Boil 3 minutes in water; change the water and drain and boil again, and squeeze out the water. Separate the segments and take out the seeds and the white covering from each segment. Use the pulp only. To one cup of the pulp and $\frac{1}{2}$ cup of sugar and boil until somewhat thick. Then add the rind and boil again until thick. Pack in well-sterilized jars and seal tightly.

Mango marmalade. — Two parts mango pulp + 1 part apple pulp + 3 parts sugar.

Nanka marmalade. — Two parts nanka pulp + 1 part apple pulp + 3 parts sugar.

Bignay marmalade. — Three parts bignay pulp + 3 parts sugar.

Santol marmalade. — Three parts sliced santol + 3 parts sugar.

Guava marmalade. — Two parts guava pulp + 1 part bignay pulp + 3 parts sugar.

Tomato marmalade. — Blanch ripe tomatoes and peel; remove the seeds, and to the pulp add some lemon pulp; make the combined pulp into marmalade, using equal parts of pulp and sugar.

General Instructions for Making Fruit Butters

Fruit butters are fruit products made by boiling the fruit pulp, straining⁵ it and boiling down, with or without sugar, to

⁵ The straining can be done through a piece of sinamay, coarse cloth made from abaca fiber, thin cheesecloth, or a fine sieve.

a thick and homogeneous consistency. Sometimes juice instead of sugar is added. Some use spices as flavoring.

Use ripe fruits only. Blanch, peel, and cut into small pieces; boil with a small quantity of water until soft; mash and pass through a screen or sieve; add 0.5 to 0.75 kilogram of sugar to 1 of pulp. If juice is to be used instead of sugar add 1.4 liters of juice to 0.5 kilogram of pulp.

Add spices, such as cinnamon, cloves, allspice, etc., to the pulp, if desired; one-third of a teaspoon of spice to 0.5 kilogram of pulp is sufficient.

Boil the pulp and sugar or juice down to a very thick consistency. While boiling hot, transfer to sterile jars or glasses and seal immediately. If glasses are used, paraffin may be used, as in jelly.

Fruit butter differs from jam in that it is finer and is concentrated to a thicker consistency.

Guava butter. — Blanch and cut ripe guavas into small pieces; boil until soft; pass through a sieve or sinamay; add 0.75 kilogram of sugar to 1 of strained pulp and boil down to a thick consistency.

Mango butter. — Peel the ripe mango and remove the seed. Reduce the meat to fine pieces and pass through a piece of sinamay. To each cup of strained pulp add $\frac{1}{2}$ cup of sugar and boil down until thick. Pack while hot in well-sterilized jars and seal tightly.

Nanka butter. — Proceed as with mango.

Duhat butter. — Same as mango, but use 0.75 kilogram of sugar to 1 of pulp.

Chico butter. — Same as mango, but use allspice, nutmeg, and cinnamon to flavor.

Papaya-Tamarind butter. — Pare the ripe papaya; remove all seeds and mash. Pass the pulp through a piece of sinamay. Soak the ripe, peeled tamarind overnight. Drain and pass the pulp through a piece of sinamay. To 1 cup of strained papaya pulp add $\frac{1}{4}$ cup of tamarind pulp and 1- $\frac{1}{4}$ cups of sugar. Boil until thick; pack while hot in well-sterilized jars and seal tightly.

Santol butter. — Boil the fruit until it becomes soft. Pare and cut into small pieces. Pass through a piece of sinamay.

To 1 cup of the strained santol pulp add 1 cup of sugar and boil until thick. Pack in well-sterilized jars and seal tightly. Small amounts of nutmeg, allspice, and cinnamon will improve the favor.

Guanabano butter.— Use the ripe guanabano. Peel and remove the seeds. Pass through a food chopper and then through a sieve or sinamay. To one cup of the strained pulp add 1 cup of sugar and boil until thick. Pack in well-sterilized jars and seal tightly.

Papaya-Guayabano butter.— To 1 cup of strained papaya pulp add 1/2 cup of strained guayabano pulp and 1-1/4 cups of sugar. Boil until thick; pack in well-sterilized jars and seal tightly.

Papaya-Orange butter.— Follow directions under Papaya-Guayabano butter, but use 1/2 cup of orange juice instead of 1/2 cup of strained guayabano pulp.

General Instructions for Making Fruit Pastes

Fruit paste is made in the same manner as fruit butter, except that it is more concentrated and is dried. The finished product resembles candy.

Mango paste.— Pare the ripe mangoes and remove the seed from each. Mash and strain through a piece of sinamay. To each cup of strained mango pulp add 3/4 cup of sugar and boil until very, very thick (until it reaches a boiling point of 222° F.); spread in a butter pan and dry in the sun. Cool and cut into pieces, as desired. Dip in powdered sugar and transfer to sterilized jars or cans and seal tightly.

Nanka, ates, guayabano, papaya, pineapple, duhat, lanzon, and chico can be made into paste by following the directions under Mango paste.

Santol paste.— Boil the fruit until it becomes very soft. Pare and reduce the santol to very fine pieces. Pass through a piece of sinamay. To each cup of strained santol pulp add 1 cup of sugar and boil until very thick. For further directions, see Mango paste.

Tamarind paste.— Peel the ripe fruits and soak overnight in plenty of water. Drain and pass the pulp through a piece of sinamay. To each cup of strained tamarind pulp add 1 cup

of sugar and boil until very thick. For further directions, see Mango paste.

Guava paste. — Prepare the guavas as for guava butter. Boil further until very, very thick. For further directions, see Mango paste.

Ube paste. — Wash the ube and boil until very soft. Mash until fine. To each cup of the pulp add $1\frac{1}{2}$ cups of milk and stir until well mixed. Pass through a strainer and boil down until it becomes thick. Then add sugar, little by little, to suit the taste. Boil until very thick. For further directions, see Mango paste.

Papaya-Orange paste. — Pare the fruit and remove all seeds. Mash and pass through a sieve or a piece of sinamay. To each cup of papaya add $\frac{1}{2}$ cup of orange juice and boil until thick. Then add 1 cup of sugar and boil down until very thick. For further directions, see Mango paste.

Preserves *

Fruit preserves are prepared from fruits and sugar. If well made they keep their form and plumpness and are somewhat crisp rather than soft.

In making preserves one should take great care to use thin syrup at the beginning. If thick syrup is used it will quickly draw the juice out of the fruit and consequently the fruit will shrink and become tough; for after the juice has gone out of the fruit the fruit will be coated with the thick syrup instead of the syrup entering the tissues of the fruit.

Kondol preserve. — Pare the fruit and open; remove all seeds and cut into slices. Soak overnight in lime water, made by dissolving 1 tablespoon of lime in 1 quart of water. Then soak in plenty of cold water for about 2 hours and drain. Boil plenty of water and drop in this the drained sliced kondol; boil for about 5 minutes and drain. To 2 cups of sugar and 1 cup of water and boil. Add to this the sliced kondol and cook until it is soft and tender. Let it stand in the same syrup overnight and then pack in jars and sterilized. Seal completely after sterilization.

Watermelon rind preserve. — Follow instructions under Kondol preserve.

* Check that equilibrated syrup concentration is 65° Brix, if not syrup has to be acidified to an equilibrated pH of below 4.5

Rimas preserve. — Wash the mature but not ripe fruit. Peel and cut into thin slices. Cook with syrup made by boiling 2 cups of sugar and 1 cup of water. Let stand overnight. Cook again the next morning for about 10 minutes. Cool and pack in jars and sterilizes for 1/2 hours. Seal tightly after sterilization.

Santol preserve. — Boil the fruit for about 3 minutes. Pare thin and cut into quarters. Remove the seeds. Cook in syrup made by boiling 2 parts of sugar and 1 part of water. Boil until the syrup becomes thick.

Green Papaya preserve. Use green papaya. Pare and wash. Open and remove all seeds; cut into desired pieces. Soak in lime overnight and follow directions under Kondol preserve. A few slices of lemon added while cooking will improve the flavor.

Camias preserve. — Use strictly fresh camias. Prick with a pin and slightly press the fruit by rolling a round roller, about 1.9 centimeters in diameter, over it to get rid of the very acid juice; rinse in cold water and boil in plenty of water, using a copper kettle. Squeeze out most of the water. To 2 parts of sugar add 1 part of water and boil in a copper kettle. To this, add the camias and boil for about 15 minutes, or until the fruit becomes green. Let stand overnight and cook again until thick. Cool; pack in jars and sterilize 25 minutes. Then seal the jars tightly.

A copper kettle is used to keep the color of the fruit green.

Lime or Dayap preserve. — Use fresh and immature limes only. With the aid of a sharp knife make narrow cuts about 2 to 2.4 millimeters apart, running spirally around the fruit. Remove the pulp from the inside without altering the shape of the fruit. Boil in a copper kettle containing water and some lime juice until the green color is fixed. Soak overnight in another container in cold water. Then boil once more in water and drain. Make syrup consisting of 1 cup of sugar to 1 cup of water and boil. To this syrup add the lime and boil until thick.

Nipa preserve. — Cut the nipa fruit open and remove the white flesh inside. Use the soft fruits only. Boil 1 cup of sugar and 1 cup of water. To this add the nipa fruit and

boil until thick. A few anise seeds added while cooking will give it a better flavor.

Suha Peel preserve. — Use immature suha with a smooth peel. Pare very thin the outer portion of the suha with a sharp knife. Cut lengthwise from 6 to 10 pieces. Remove the pulp and use the thick peeling only. Soak in concentrated brine or salt solution until it becomes very soft. (This takes a few minutes only.) Then squeeze or work it with the same brine for about 10 minutes. Then wash away all the salt with plenty of water. Squeeze or work it well with cold water until the peel is no longer bitter to the taste. Boil in a copper kettle with plenty of water until tender. Then wash with cold water and squeeze out all the water. Drop in syrup made by boiling 2 parts of sugar to 1 part of water and boil until tender. Cool; pack in jars and sterilize for 30 minutes. Seal jars tightly after sterilization.

Pineapple preserve. — Pare the ripe pineapple and remove the eyes. Slice as desired; place in a container alternate layers of sugar and fruit, using 1 part of sugar to 1 part of the fruit, and let stand overnight. Then drain off the syrup and boil for 10 minutes. Add the fruit and continue boiling 15 minutes. Pack in jars and sterilize 25 minutes.

Bignay preserve. — Use ripe bignay. Make a syrup, using 2 parts of sugar to 1 part of water. Add the fruit to the syrup and boil 10 minutes. Let stand overnight and cook again until thick. Pack in well-sterilized jars and sterilize 20 minutes. Seal the jars tightly after sterilization.

General Instructions for Canning Vegetables *

With the exception of some minor details, the principles of fruit canning hold good for vegetables. Like fruits, vegetables are sorted, cleaned, blanched, packed and sterilized. Syrup is generally used in canning fruits; brine takes its place for vegetables.

It is safer for a vegetable canner to use well or spring water in making the brine. If such water is unobtainable tap water may be used, if filtered or boiled and allowed to settle, in order to remove the lime and iron impurities. The salt used should be free from chlorides and sulphates of lime, because these will

* Generally vegetables have low acidity (pH below 4.5) which makes canned vegetables susceptible to *Clostridium botulinum* poisoning. Vegetables can be acidified to equilibrated pH of 4.5 or below, if not acidified it has to be processed in a pressure canner at 10 to 15 lbs. pressure. Processing time and temperature must be verified DOST-ITDI has a publication on process times and temperatures for vegetables.

cause the vegetables to become tough. The iron present in tap water, if not removed, will cause discoloration.

As vegetables are usually low in acid they constitute very suitable living quarters for spore-forming bacteria. Therefore, it is of great advantage, in sterilizing them, to use a pressure cooker instead of a steam oven or boiling water.

If vegetables are not strictly fresh, soak them in cold water to restore their crispness. Sort, blanch, and immediately soak in cold water. Cut off undesirable portions, and then cut the remaining portion into desired pieces for canning. Pack in cans or jars; add salt and boiling water or brine; sterilize. If jars are used, seal completely. Cool in an inverted position. Label and store.

Tomatoes, or camatis. — Sort and use ripe tomatoes only; blanch to loosen the skin; pack in jars or cans and half seal; add 1 teaspoon of salt to the quart jar; sterilize 30 minutes in boiling water or steam oven, or 15 minutes, in pressure cooker of 5 to 10 pounds; seal completely; cool in inverted position; store.

Tomatoes may be canned with the juice. If water is used instead of juice, the product may be deemed adulterated.

Some use a half teaspoon salt and a half teaspoon sugar instead of salt alone.

Patani. — Known as bakuen, can-a, bialay, buni, buringi, butingi, haba, habichuela, kikilang, kopani, kutakut, caliding, palpalai, parda, perkoles, pinda.

Remove the beans from the pod; blanch and peel off the coating of the bean if desired. Pack in jars or cans and add boiling brine of 1.5 per cent strength. 50 minutes in a pressure cooker of 10 to 15 pounds. Check seal after sterilization and cool in an inverted position. Label and store in a cool, dry, and dark place. The use of poisonous patani beans should be avoided.

Ampalaya—Known as amargoso, palia, kabiring, papit, paria, pulia, saligun.

Sort and wash; blanch the tender ones and cut open lengthwise; remove the seeds and soft portions where the seeds are embedded; cut crosswise into pieces of desired size, taking care

to make them uniform. Pack in jars and add boiling 2 per cent brine; sterilize (see Patani); check seal after sterilization and cool in an inverted position. Label and store in a cool, dark, dry place.

Patola.—Known as sikua and timon-anban

Sort and wash; blanch 2 minutes. Pare with a knife and cut into suitable pieces. Pack in jars or cans and add boiling 1.5 per cent brine; sterilize (see Patani); check seal after sterilization and cool. Label and store in a cool, dry, and dark place.

Batao.—Known as apikak, baglan, bulai, itab, parda, parada-atap, Sibachi.

Sort and use tender pods only; wash in cold water. String the two ends and cut into pieces if desired; blanch for 2 minutes; cool. Pack in jars or cans; fill with boiling 2 per cent brine; sterilize 55 minutes in pressure cooker of 10 to 15 pounds; check seal and cool. Label and store.

Sitao.—Follow directions under Batao, cutting the pods into lengths of about 3.8 centimeters.

Cowpea, or *kibat*.—Known as balatong, batong, karakala, hamtak, otong, sitao.

Follow directions under Batao.

Seguidilla.—Known as amali, batong-balimbing, bulugian, cigarillas, buligon, beyed, kalamismis, kamaluson, palag, palam, parupagulong, karibang, sererella.

Follow directions under Batao.

Upo.—Known as baguang, buliangin, kalubay, sikay, tabungan, tabu-o.

Sort; use tender ones only; wash and remove soft portions and seeds from center; cut into desired pieces. Pack in jars and add boiling 1.5 per cent brine; sterilize 45 minutes no pressure cooker at 10-15 pounds percent. Check seal after sterilization and label; store.

Pumpkin or calabaza (as a vegetable).—Sort and use tender ones only; wash, blanch, and peel; cut open and remove seeds; cut into small pieces and pack in jars or cans; add boiling

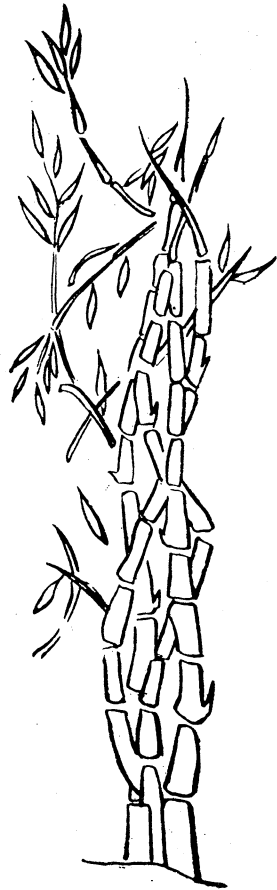
1.5 per cent brine. Sterilize 45 minutes in pressure cooker, 10 to 15 pounds.

Calabaza (for pie filler).—Use mature calabaza; wash, blanch 5 minutes, and pare; cut open and remove the seeds; cut into pieces and boil in as little water as possible until soft; pulp and fill sterile jars or cans. Sterilize 45 minutes in pressure cooker, 10 to 15 pounds, check seal. Label and store. Cook with sugar. If desired.

Habichuelas.—Use tender, fresh pods only. String and cut into pieces $1\frac{1}{2}$ to 2 inches long. Blanch in soda solution (made by boiling 1 teaspoonful of soda with 1 gallon of water) for five minutes. Then plunge into a salt solution (made by dissolving 1 tablespoonful of salt to 1 quart of water) for about a half minute. This is done to fix the green color of the vegetable. Drain and pack in jars. Add 1 teaspoon of salt to the quart jar and half that amount of the pint jar and fill with boiling water. Seal and sterilize 1 hour in pressure cooker at 15 lbs. Seal tightly after sterilization.

Pea pods (Chicharro).—Follow directions under *Habichuelas*.

Peas (Guisantes).—Use fresh and tender peas only. Remove the peas from the pod and blanch 3 minutes in soda solution. Then plunge them into the cold salt solution. Drain and pack in jars. Add 2 teaspoon salt to quart jars and fill them with boiling water. Seal and sterilize 1 hours in at 15 pounds pressure. Completely seal after sterilization.



Some Pickles

Bamboo Shoot Pickle.

- 4 cups of sliced bamboo shoot
- 2 sections of garlic.
- 2 sweet red peppers.
- 1 hot red pepper.

8 small native onions.

A small piece of ginger.

Take the fresh bamboo shoot and cut into desired pieces. Soak overnight in strong salt solution. This keeps the bamboo shoot white. Boil in plenty of hot water until tender. Drain and pack in jars with the above ingredients which with the exception of the hot red pepper and onions, must also have been sliced into small pieces. Arrange the ingredients in the jars in such a way as to make the pickle attractive. Make a solution of 4 parts of vinegar and 1 of sugar and while boiling hot pour in the bottle to cover the products. Seal the jar tightly.

Papaya Pickle.

- 3 cups of grated green papaya.
- 1 small cucumber.
- 2 sweet red peppers.
- 1 hot red pepper
- 1 carrot.
- 1 ampalaya.

Pare the green papaya and grate it. Soak overnight in strong salt solution.* Peel the cucumber and carrot; slice; cut the ampalaya into pieces. Soak overnight in strong salt solution with a pinch of alum to make it stay crisp. Wash with water the next morning and drain. Pack in jars, using all the ingredients mentioned above and arranging them in an attractive manner. Pour a hot solution of 4 parts of vinegar and 1 of sugar. Seal tightly.

Half-ripe Papaya Pickle.

- 4 cups of half-ripe papaya.
- $\frac{2}{3}$ cup of sugar
- 1 small onion.
- $\frac{1}{2}$ cup vinegar.
- $\frac{1}{2}$ large ginger root.
- 1 section of garlic.
- 1 green pepper.

Pare onion and garlic; slice thin. Remove seeds from pepper and slice. Boil the vinegar, sugar, ginger, and garlic for 20 minutes. Then add pepper and boil for 5 minutes longer. Add papaya and onion and boil until clear. Pack in jars and seal tightly.

* Alternatively, add 3% dry salt of the weight of vegetable, to draw out the moisture by osmosis. Let stand 1 hr. before pressing out the liquid. Then proceed with the pickling solutions. 1:1 vinegar to sugar by volume have been found to be most acceptable level of sweet-sour for Filipinos. Vinegar should have 4 to 4.5% acidity.

Sinkamas Pickle.

- 6 cups sliced sinkamas.
- 2 cups grated green papaya.
- 3 sections of garlic.
- 1 small piece of ginger.
- 3 sweet green peppers.
- 2 sweet red peppers.
- 2 hot red peppers.

Peel the sinkamas and cut into desired pieces. Soak overnight in strong salt solution with a pinch of alum. Soak the grated green papaya overnight in strong salt solution. Wash the sinkamas and papaya and drain. Slice into small pieces the garlic, sweet green peppers, sweet red peppers, and the ginger, and pack them in jars with the cured sinkamas and grated green papaya. Pour over each jarful a hot solution of sugar and vinegar, made by boiling 3 parts of vinegar to 1 part of sugar. Seal tightly.

Sour pickles consisting of the same ingredients can be made by using vinegar alone.

Sweet Green Tomato pickle.—Cut the green tomatoes into thin slices and add $\frac{1}{4}$ of the amount of salt. Let stand about 2 hours. Drain out the liquid. Make a solution of 4 parts of vinegar and 2 parts of brown sugar and boil. To this add the tomato and cook until soft. Add small amounts of nutmeg, allspice, cloves, and cinnamon and cook to a thick consistency. Pack in well-sterilized jars. Sterilize 30 minutes and seal completely.





Chutney

Chutney is a sweet, hot pickle very popular in India. It is usually served with cold meats, sausage, and curries.

Mango chutney

- 8 cups of sliced mature but not ripe mangoes.
- 3 small boxes of raisins.
- 1 large piece of ginger root.
- 1 hot pepper.
- 3 segments of garlic.
- 1 tablespoonful of salt.
- 8 cups brown sugar.
- 3 cups vinegar.

Boil the vinegar, salt and brown sugar and strain through a piece of thick cloth. Boil again for about 15 minutes. Add the sliced mango and continue boiling until soft. Add the raisins, then the sliced garlic and hot pepper, and boil 5 minutes. Lastly, add the finely sliced ginger and boil until thick. Pack in well-sterilized jars and seal hermetically.

Hevi chutney. — Use mature but not ripe hevi. Slice into thin slices and follow directions under Mango chutney.

WINE MAKING AND CANNING

By Jose I. Sulit

The Philippines is blessed with various kinds of fruits that are delicious and highly flavored. This group of fruits are suitable for wine-making, vinegar, fruit juices and syrups.

WINE-MAKING

The fruits used for wine-making are the following:

1. Pineapple
2. Kasoy
3. Duhat
4. Guayabano, and
5. Guava

The pineapple and kasoy fruits are considered juicy and the extracted juice is treated with $\frac{1}{4}$ the amount of white refined sugar and fermented into fruit wines.

The pure juice is heated to 80°C and then treated with $\frac{1}{4}$ the amount of sugar while hot; cooled and allowed to fer-

ment with one tablespoonful of Fleischmann yeast per 20 liters of the sweetened juice. After one month the clear wine is syphoned or decanted separating the residue. To the fruit wine is added 5-10 per cent 95% refined alcohol and set aside for one year before serving.

Non-juicy fruits, are treated with equal amount of water and boiled for at least 20 minutes or until cooked; then strained while hot without pressing, and while still hot, the fruit extract is treated with $\frac{1}{3}$ the amount of white refined sugar; cooled and treated with one tablespoonful of Fleischmann yeast per 20 liters of the sweetened fruit extract; then allowed to ferment for at least 30 days. The clear wine is syphoned or decanted to separate the residue and then treated with 5-10 per cent of 95% refined alcohol. The wine is set aside for at least one year before serving.

CLARIFICATION OF FRUIT WINE

The finished wines of duhat, kasoy, guava and guayabano are sometimes turbid and acrid due to the tannins present in the wines. In such a case, the wine is treated with 1 per cent solution of egg albumin. The mixture is heated until the precipitates are produced and set aside for them to settle. If the wine is clear, it may be syphoned or decanted but if still turbid, the wine may be passed through a filter with the aid of water suction.

CASUY WINE

Use fully ripe fruit only. Wash and remove the kidney-shaped nuts. Crush the fruit either with a stone or wooden crusher made for the purpose, or (in the absence of these crushers) with the fingers. Press a second time. Measure the juice and to every 4 parts, add one part of first class refined sugar. Heat the sweetened juice 70° Centigrade, or until the scum begins to rise to the surface of the liquid. Cool down to room temperature and add $\frac{1}{4}$ cake of an ordinary ten-centavo Fleischmann's yeast cake to every 15 to 20 liters (one demijohn) of the juice. Cover the mouth of the fermenting vessel or loosely stopper it and set aside for at least two weeks to allow fermentation. Set aside for another month to settle. Decant the clear wine to a wine barrel and age at least one year before using.

The aged casuy wine is turbid and may be clarified by the following method:

Mix equal amounts of egg albumen and water and to every quart of wine, add 10 cubic centimeters or $\frac{3}{4}$ tablespoon of albumen solution. Mix well. Heat the mixture in a double boiler until precipitation or curdling is accomplished. Set aside overnight and filter through thick cheesecloth.

GUAVA WINE

Wash fruit and remove the blossom ends. Cut to quarters and boil with twice the amount of water for 30 minutes, or until the guavas are soft. Strain through a piece of cheese cloth and measure. Add $\frac{1}{3}$ its amount of sugar, and cool. Then add $\frac{1}{4}$ cake of the ordinary ten-centavo Fleischmann's yeast to every 20 liters of the sweetened guava extract. Set aside to ferment in a wine barrel or demijohn for at least one month, or until most of the sugar is converted into alcohol and carbon dioxide gas. Set aside further for one month to allow "setting". Then, transfer the clear wine to a clean barrel, close tightly, and age for at least one year. Filter and bottle. Stopper bottle tightly so as not to allow further oxidation.

FRUIT JUICES AND SYRUPS

Fruit juices may be pasteurized; packed in cans or bottles and processed in boiling water for 10-20 minutes, the length of time depending on the size of containers.

The fruit juices may be treated with twice the amount of sugar and heated just to dissolve the sugar and then packed in cans, jars or bottles and set aside without processing. The amount of sugar used will serve as preservative for the syrup.

MANUFACTURE OF VINEGAR

Vinegar may be prepared from coconut water, palm sap, ripe bananas and pure fruit juices, or it may be produced as a by-product in the manufacture of fruit nata.

The manufacture of vinegar is a fermentation process, thereby converting the sugar to alcohol and the alcoholic liquid converted to vinegar with the action of vinegar bacteria found in newly made vinegar.

The coconut water is heated to boiling to remove the scum and then treated with 10 per cent sugar; fermented into al-

cohol for 21 days and then treated with $\frac{1}{4}$ to $\frac{1}{3}$ of newly made vinegar to convert the alcoholic liquid to vinegar. The time is one month after the addition of the newly made vinegar to the alcoholic liquid.

CANNING OF CORN

Canning of corn is one of the most important of the vegetable canning industries.

Most canned corn are packed in No. 2 cans, or 500 ml. can containers. Canned corn usually appears in two styles, namely:

1. Main style
2. Maryland style

The Main-style corn is obtained by cutting the kernels and scraping the remaining portion of the kernel from the cobs; and mixing the two portions. Enough water flavored with salt and sugar is usually added, to give the desired consistency. Sometimes a little amount of starch is added to give body to the vegetable.

The Maryland or whole kernel corn, consists of whole kernels cut from the cob and canned with brine solution.

A third style is the double-cut corn known as "cremogenized." The corns are first cut from the cobs; then some of the kernels are cut to a creamy consistency and mixed with the whole kernels; then canned as creamy style corn.

All the cans used for canning corn are lined on the inside with the so-called C-enamel which contains zinc oxide. The main purpose of using zinc oxide is to produce the white zinc sulfide precipitate instead of the black iron sulfide.

Only tender corn of fine quality should be used and should at least be 12 oz. of corn to every No. 2 can. With the necessary amount of liquid the cans are heated to 80° and then sealed hermetically. The vacuum packed corn is processed for 55 minutes at 240°F (10lbs. pressure); 45 minutes at 245°F and 35 minutes at 250°F (15 lbs. pressure).

In filling the cans a head space of $\frac{1}{4}$ inch should be maintained before sealing.

U.S.D.A. STANDARDS FOR CANNED CORN

The U.S.D.A. standards for canned corn are as follows:

* Information on canning have been culled from United States Dept. of Agriculture publication.

U.S. Grade A Fancy Cream Style corn must be prepared from young tender sweet corn or of a similar variety. The color is bright, and the product possesses a heavy creamlike consistency. It is practically free from defects such as presence of silks, husks, particle of cob, off-colored kernels, etc. The kernels have been cut neatly and uniformly from the cob and are in the early cream stage of maturity. The product possesses a flavor typical of succulent young corn and scores not lowered than 90 points by the U.S.D.A. canned-corn scoring system.

U.S. Grade B (Extra Standard or Choice) canned cream-style corn has similar specifications to those of Grade A except that the word "reasonably" replaces "practically", the corn is in the cream stage and scores 75 to 89 points.

U.S. Grade C (Standard) cream-style corn is of some what poorer quality than Grade B, yet must be palatable, fairly free from defects, and score 60 to 74 points.

Off-grade canned corn is that which scores less than 60.

Cans of corn are considered slack-filled if the head space, measured from the top of the product to the underside of the lid, exceeds 10 per cent of the total inside height of the can. Cans that are slack-filled must be labeled "Below Standard Fill."

CANNING OF TOMATOES

For some time canned tomatoes headed the list of canned fruits and vegetables in quantity but in recent years they have been exceeded by canned corn and peas.

Consumption of canned tomatoes, other than tomato juice, is decreasing due to the production of fresh tomatoes from the home gardens. The increase of canned citrus juice has lessened the demand for canned tomatoes.

The variety of tomatoes for canning should be the moderately large and smooth so that peeling is easily accomplished. The tomatoes should be evenly ripened to a clear red color throughout and should possess a large portion of solid meat of good flavor.

The soft, watery variety and the yellow purple variety are objectionable. A deep uniform red color is desirable. Tomatoes should not only be desirable for canning but also must yield well to be proven profitable. Early ripening is therefore

desirable, since yield is largely depended by the length of the season.

Tomatoes should not be allowed to stand in the field in the sun after picking, because this will cause overripening and development of spoilage organisms. Instead, they should be transported to the cannery as quickly as possible and without undue bruising or crushing in transit.

Tomatoes deteriorate rapidly and should be canned immediately. If there is delay in canning they should be stored in the shade. Tomatoes should be washed and sorted before scalding. In the majority of canning plants, the peelers do most of the sorting. If the washers of tomatoes carefully sort the tomatoes, only the perfect ones go to the scalding and the rotten ones and other small and undesirable fruits go to the pulping line. Only the best tomatoes should be canned. The small badly wrinkle ripened and overripe fruits should be used for the pulping.

Tomatoes are scalded sufficiently to loosen the skin but not too long so that the pulp and flesh become soft. Scalding is a process of converting in boiling water or in live steam. The tomatoes are exposed to the live steam from $\frac{1}{4}$ to one minute, depending on the condition of the tomatoes. As they emerged from the scalding, they are sprayed with cold water or immersed in cold water to check further cooking and at the same time crack the skin. Peeling is essential in order to avoid incipient spoilage.

The tomato is peeled by first pulling the skin back from the blossom end the blade of a short coring and peeling knife. The operation is completed by removing the core with the point of the knife, which is directed toward the center of the tomato to avoid opening the seed cavity. The peeled tomatoes are conveyed by a belt to the canning department.

SPOILAGE OF CANNED FOODS

All canned foods after processing or sterilization are subject to deterioration during storage. Such changes may not render the food unfit for consumption but the appearance of the container or the product becomes unattractive.

The general types of food spoilage are known, namely;

- (1) Spoilage by microorganisms
- (2) Changes by chemical or physical agencies but micro-

biological spoilage of canned foods is more serious to food processors.

Spoiled canned foods exhibit various differences in appearance, taste and odor from normal cans. Such common designations of food spoilage may be presented as follows:—

Swell: Swelled cans of foods are usually so badly decomposed as to be unfit for human consumption. They may be poisonous due to the presence of *Bacillus botulinus* (*Clostridium botulinum*).

Hydrogen Swell: It is caused by the production in the can of hydrogen gas as a result of the corrosion of the tin plate. The food is usually fit for human consumption.

Springer: It is mostly a mild swell caused by over-filling or by insufficient exhausting. The ends of the can of a springer can be pressed in with the hand and will remain concave for a time. Springer, if caused by overfilling underexhausting or corrosion can be used for food.

Flat Sour: This is the cause of can spoilage due to the spoilage microorganisms without gas formation and is normal in outside appearance. The product has a sour taste with a sour odor.

Leakers: Such occurrences are due to (1) faulty sealing, (2) faulty manufacture of the cans, (3) pinholing by corrosion of the cans from the inside or rusting of the can in the inside, (4) bursting of the cans due to formation of hydrogen gas due to spoilage microorganisms and (5) by rough handling of the cans.

DISCOLORATION

Discoloration is common among canned corn with the production of black precipitate of iron sulfide or copper sulfide. Iron sulfide is produced by the action of sulfur present in corn with the iron of the tin cans. This is being remedied by the use of C-enamel cans containing zinc oxide, which cause a white precipitate upon reaction instead of the black precipitate of iron sulfide.

Blackening of peas: A black deposit is sometimes produced in canned peas similar to iron sulfide found in canned corn. The remedy is to can peas as quickly as harvested to avoid the formation of hydrogen sulfide which in turn will react with the iron of the tin cans to produce the black precipitate of iron sulfide.

Chapter II

COCONUT IN OUR DAILY DIET

WHAT THE PLANT UTILIZATION DIVISION,
BUREAU OF PLANT INDUSTRY, HAS BEEN DOING TO
POPULARIZE ITS USES



It is a well known fact that the present diet of our masses is deficient in fat, proteins, minerals, and vitamins for it consists of a great portion of carbohydrates in the form of boiled rice and a limited amount of protein in the form of fresh or dried fish. I feel sure that no one will disagree with me if I say that the addition of coconut to our present diet will greatly improve it for as we know, coconut is rich in fat and protein. It also contains vitamins and minerals. Dr. Vicente Lava of the Bureau of Science computed that each mature coconut gives/

15.1 grams of protein; 116 grams of oil; 10.7 grams of sugar; 8.8 grams of crude fiber; and 4 grams of mineral matter. Laguna nuts were used in the analysis.

The work of Sherman showed that coconut is a poor source of vitamin A, but a good source of vitamins B1 and G. The work of Miller showed that the soft spoon or young coconut has a higher vitamin A content than the mature one. There seems to be a conflicting report on the vitamin C content of coconut, for while some investigators believe that vitamin C is lacking in all forms of coconut, others believe that it is present in the water and in the soft pulp of the young coconut.

Compared with other fats, the coconut oil contains the highest percentage of assimilable glycerides, and it is, therefore, even more digestible than the butter fat.

Vohn's work on coconut proteins showed that it contains all the essential amino acids to sustain a normal growth.

A certain amount of roughage in our diet is conducive to a normal assimilation for the intake of concentrated foods alone is often the cause of digestive disturbances. It follows, therefore, that coconut may be most advantageously used in a diet consisting of breads, crackers, biscuits, cakes, boiled rice and boiled roots such as potatoes, and cassava.

Those who, for certain reasons, have to live on a fruit-vegetable diet, will find that the inclusion of coconut will prove a great advantage, for an addition will supply the fat and protein requirements of the body.

The coconut, besides being a very nutritious food, has some medicinal properties. Very interesting experiments were made in Saigon hospital upon patients suffering from beriberi, neurasthenia, malarial anemia and pneumonic influenza. Coconut milk has diuretic properties and has beneficial effect upon many cases of acute or chronic kidney troubles. Coconut has been recommended to those suffering from diabetes and who can not indulge in a carbohydrate diet.

Fully aware of the coconut as food, that it is very abundant in many parts of this country, and obtainable at very low prices, and knowing also that very few Filipinos include it in their daily diet; the former Home Economics Division of the Department of Agriculture and Commerce, now Plant Utilization Division of the Bureau of Plant Industry, immediately went to task when the Coconut Industry began to suffer a marked drop in the prices of copra and oil as a result of the coconut crisis. Through the continued efforts of the Plant

Utilization Division of the Bureau of Plant Industry, experiments were made on the diversified uses of coconut for the table and this resulted in the publication of a mimeographed pamphlet containing 35 recipes on coconut which were distributed free of charge to the home makers of the Philippines. These researches on more uses for coconut were continued and about 300 coconut recipes have been formulated and tested. For the present, for reasons of expediency, only 66 recipes are included in this pamphlet, but the rest will be published at a later date which we hope will be a more comprehensive publication for it will not only contain recipes but detailed discussion on coconut.

The Plant Utilization Division does not popularize coconut preparations through the distribution of recipes only, but it holds actual demonstrations to groups of women, and through the services of the Provincial Home Demonstrators appointed under Commonwealth Act 85, and under the direct supervision and control of the Plant Utilization Division, Bureau of Plant Industry, who organize Rural Improvement Clubs in all points of the Philippines to help the women become better homemakers.

For the information of the public, the first teachers of the Model School in Sariaya are members of the staff of the Plant Utilization Division. On the occasion of the inauguration of the Model School of the NACOCO,* the Plant Utilization Division concocted a number of coconut preparations such as, cakes, cookies, lumpia and other dishes, and a variety of candies. In connection with the opening of the exhibits on coconuts, and in compliance with the request of the National Coconut Corporation, the Plant Utilization Division will exhibit at the Philippine Trading Center the commercial possibilities of coconut candies which are made to resemble strawberries, bananas, tomatoes, ham, bacon, and sausages, products which were never made, much less exhibited in public.

According to our computation, if one half of the population of the Philippines will include coconut in their daily diet, and if each average family consisting of five members will consume two coconuts per day, we shall consume one third of our total yearly production which is approximately three and one half billion nuts.

For better health and for the benefit of the coconut industry let us include more coconut in our daily diet.

Let us also congratulate the National Coconut Corporation whose present efforts are directed towards a better health of the Filipinos through increased home consumption of coconut, and a more prosperous coconut industry by improving the Philippine copra through government standardization, and the industrialization of coconut by-products.

COCONUT RECIPES*

COCO PINEAPPLE MASAPAN

2 cups grated coconut, chopped finely	2 cups sugar
1 tablespoon flour	1 cup pineapple, chopped finely
1 small can evaporated milk	Egg whites for brushing
2 egg yolks, beaten lightly	2 tablespoons evaporated milk

Mix COCONUT, pineapple, evaporated and COCONUT milk, and sugar, and cook in a copper vat. Stir constantly while cooking. When the mash reaches the consistency of a thick jam, remove from fire and cool. Add egg yolks, flour, and mix well. Continue cooking until the mass no longer sticks to the finger when touched. Fill candy paper cups and brush top with slightly beaten egg whites to which was added about 2 tablespoons evaporated milk. Bake in a hot oven until brown.

COCONUT ECONOMY CAKE

$\frac{3}{8}$ cup flour	$\frac{1}{3}$ cup sugar
1 teaspoon baking powder	1 egg, well beaten
2 teaspoons shortening	$\frac{1}{3}$ cup coconut milk
$\frac{1}{2}$ teaspoon vanilla	

Sift flour and baking powder three times. Cream butter and sugar. Add egg and mix well. Add flour gradually alternately with milk. Add vanilla and mix well. Bake in a moderate oven.

COCONUT HOT CAKE

1 cup coconut milk	1 teaspoon baking powder
$1\frac{1}{2}$ cup cassava flour	1 tablespoon sugar
3 eggs	$\frac{1}{4}$ teaspoon salt

* Including other recipes as collected from the files.

Beat eggs; add milk and flour sifted with dry ingredients 3 times alternately. Drop by spoonfuls in a greased pan and cook until both sides are brown. Serve with COCO honey.

MAMMY'S FAVORITE PUDDING

1½ cups grated coconut	1½ cup sugar
1 cup coconut milk	1½ cups water
3 cups bread toasted and cut in small cubes	1 small box raisins 1 teaspoon nutmeg

Mix above ingredients. Pour in greased muffin pans. Bake in a moderate oven. Serve with sauce made as follows:

½ cup coconut, grated	1 teaspoon vanilla
1 cup coconut milk	¼ teaspoon salt
1 cup sugar	2 tablespoons corn starch

Mix all ingredients and cook in a double boiler about 10 minutes. Add coloring and continue cooking 5 minutes longer. Pour over pudding just before serving.

PACIENCIA BUKO SOUP

1 cup buko, cut in small squares	¾ teaspoon salt 1 segment garlic, pounded
2 cups chicken broth	1 tablespoon fat
1 cup coconut milk	

Sauté garlic and remove when brown. Place broth on pan where garlic was browned, and let boil. Add BUKO and season with salt. Add coconut milk and immediately remove from fire. Serve with croutons if desired.

SUNSHINE SOUP

1 cup buko, cut in small pieces	1 small segment garlic, pounded
1 cup coconut milk	½ cup string beans cut finely
2 cups beef stock	1 teaspoon salt
1 tablespoon fat	Pepper to taste

Sauté garlic, remove when brown. Add stock and when boiling, add string beans and cook until tender. Drop BUKO and boil 2 minutes. Add coconut milk, bring to a boil, and immediately remove from fire. Season with salt and pepper. Serve hot.

BUKO-CHICKEN SOUP

2 cups buko, cut to small pieces	10 cups chicken broth
1 cup boiled cassava cut to small cubes	Salt and pepper to taste

Strain chicken broth. Season with salt and pepper to taste, and bring to a boil. Add BUKO and cassava in the boiling broth and boil two minutes. Serve hot.

BUKO-PILI SOUP

1 cup buko, chopped fine	¼ teaspoon pepper
1 cup coconut milk	2 tablespoons corn starch
¼ cup beef, chopped fine	1 egg
1 tablespoon green onion chopped fine	6 cups beef broth
1 teaspoon salt	3 tablespoons pili nut, roasted and chopped finely

Mix all ingredients excepting the broth and the COCONUT milk. Drop the mixture by teaspoonfuls in deep, hot fat. Fry until brown and drain.

Strain beef stock. Boil and season with salt and pepper to taste. Add COCONUT milk. Serve with the fried BUKO mixture.

MOCK MACARONI WITH CHEESE

1 cup buko (grated with maka- puno grater)	¼ cup grated cheese
	1 tablespoon finely chopped onion
½ cup tomato catsup	

Sauté onion. Add catsup and cook 2 minutes.

Place grated BUKO in a baking pan or pyrex casserole and pour tomato catsup over it and mix. Sprinkle evenly on top grated cheese and bake in a moderate oven until the top browns.

BUKO LUMPIA

2 buko grated	½ cup soy beans (cooked)
¼ cup shrimps, sliced	A few sections garlic, sliced
¼ of a cabbage, sliced fine	⅓ onion, sliced fine
⅓ cup pork, sliced	Lumpia wrappers

Sauté garlic, onion, pork, shrimps, soy beans, cabbage and BUKO. Season with salt to taste. When done, wrap in lumpia wrappers. Serve with lumpia sauce.

BLUSHING BUKO

1 cup buko, grated	3 tablespoons lard
¼ cup boiled shrimps, chopped	2 tablespoons corn starch
2 eggs, stiffly beaten	salt and pepper to taste

Mix BUKO, shrimps, salt, pepper, and corn starch. Add well beaten eggs. Pour mixture in a hot frying pan containing

hot lard, spreading the mixture in the pan evenly. Cook until light brown. Turn over to brown the other side. Cut in squares and serve with tomato catsup.

BUKO MOONLIGHT

- | | |
|--|----------------------------------|
| 1 cup buko, cut in small pieces | 3 tablespoons thick shrimp stock |
| 3 tablespoons boiled shrimps, sliced in pieces | Salt to taste |
| 2 eggs, beaten | Fat for frying |
| | Celery leaves for granishing |
| 2 tablespoons flour | |

Mix flour and shrimp stock; add shrimps, BUKO, and salt. Fold in beaten eggs. Drop by tablespoonfuls in hot fat and fry until brown. Garnish with celery leaves. Serve hot.

BUKO-AMPALAYA VEGETABLE DISH

- | | |
|---|------------------------|
| 1 cup buko, cut in pieces | 1/2 cup shrimp stock |
| 1 cup ampalaya, worked in salt, and washed thoroughly | 2 tablespoons lard |
| 2 tablespoons shrimps, cut to pieces | 1 segment garlic |
| 2 tablespoons pieces of pork, | 1/4 onion, sliced fine |
| | Salt to taste |
| | 1 tablespoon "bagoong" |

Sauté garlic, onion, shrimps, pork, and "bagoong." Add stock and boil; add ampalaya and stir. Cook until tender. Season with salt. Add BUKO and cook two minutes longer.

BUKO SURPRISE

- | | |
|-------------------------------------|-----------------------------------|
| 1 cup buko, cut in strips | 1 tablespoon green onion, chopped |
| 1/4 cup pork, cut in strips | 2 tablespoons fat |
| 1 tablespoon shrimps, cut in pieces | 1/2 cup coconut white sauce |
| 1/4 onion, chopped | 4 tomatoes, regular size |
| 1 segment garlic, pounded | Salt and pepper to taste |

Sauté garlic, onion, shrimp and pork. Season with salt and pepper. Add BUKO and green onion and set aside. Cut a round opening on the stem end of tomato, remove seeds, drain juice, and stuff with prepared mixture. Cover top with COCONUT white sauce.

WHITE SAUCE

- | | |
|----------------------|------------------------|
| 1/2 cup coconut milk | 1 teaspoon corn starch |
| 1 teaspoon salt | 1 tablespoon fat |

Heat fat and add corn starch; stir well. Season. Add COCONUT milk and stir continuously until it boils, and the sauce thickens.

"BUKO" OMELET

½ cup buko, shredded	2 eggs
¼ cup pork, ground	1 small onion, finely chopped
1 potato, diced	1 section garlic, finely chopped
2 tablespoons lard	Salt and pepper to taste

Saute garlic, onion, and pork. Add BUKO and potato. Season with salt and pepper. Continue cooking until done. Beat aggs; put in a frying pan in which lard has been heated and pour the cooked mixture over it. Continue frying, folding over the eggs. Fry on all sides until brown. Serve hot.

RURAL IMPROVEMENT CLUB LUMPIA

2 cups buko, cut in strips	½ cup pork stock
1 cup cabbage, cut in strips	1 segment garlic, minced
½ cup sincamas, cut in strips	½ onion, medium sized
½ cup shrimps, cut in pieces	4 tablespoons lard
1 cup shrimp stock	Toyo to taste
½ cup par boiled pork, sliced in pieces	Lumpia wrappers
	Fresh, native lettuce

Sauté garlic, onion, shrimp, and pork. Add toyo and cook 1 minute longer. Add shrimp stock and stir while adding. Boil 5 minutes. Add cabbage, sincamas, and BUKO. Cook until tender. Add pork stock. Continue cooking 5 minutes longer. Cool partially before wrapping, lining each lumpia with a lettuce leaf.

Serve with sauce made as follows:

¼ tablespoon corn starch	1½ tablespoons sugar
1 teaspoon salt	1 cup water
1 tablespoon toyo	

Mix all ingredients and stir well to suspend starch uniformly. Cook over a slow fire until the paste thickens to the desired consistency.

BUKO RURAL CHOPSUEY

1 cup buko, diced	2 tablespoons lard
¼ cup coconut milk	1 teaspoon salt
½ cup cabbage, diced	1 teaspoon toyo
½ cup green papaya, sliced thinly	2 tablespoons kinchay
2 tablespoons shrimps, cut in pieces	½ cup shrimp stock
¼ onion, sliced	1 tablespoon corn starch
	A dash of white pepper
1 segment garlic, minced	

Sauté garlic, onion, shrimp, and pork. Add shrimp stock and stir. Add cabbage and papaya. Cook until tender. Add

BUKO, then COCONUT milk; season with salt, pepper, and "toyo." Thicken sauce with corn starch and allow to boil two minutes. Add "kinchay" just before removing from fire.

BUKO WITH BAGOONG

- | | |
|--------------------------------------|--|
| 1 cup buko, cut in pieces | 1 segment garlic, pounded |
| ½ cup coconut milk | ¼ onion, sliced |
| 2 tablespoons coconut oil, or lard | 1 tablespoon pork, cut in small pieces |
| ½ cup string beans, sliced in pieces | ¼ cup pork stock |
| 2 tablespoons "bagoong" | Salt and pepper to taste |

Sauté garlic, onion, pork, and "bagoong"; continue sautéing until pork is brown. Add stock and boil. Add string beans and cook until tender. Add BUKO, COCONUT milk, and boil. Season with salt and pepper and remove from fire. Serve hot.

RURAL IMPROVEMENT CLUB BUKO PANSIT

- | | |
|---|---------------------------------------|
| 2 cups buko, cut in long strips | 1 segment garlic, minced |
| ½ cup cabbage, cut in strips | ¼ onion, sliced |
| 3 tablespoons shrimps, sliced | 1 teaspoon toyo |
| 3 tablespoons pork, par-boiled and sliced | Salt and pepper to taste |
| ¼ cup shrimp stock | 3 calamansi, cut in halves, crosswise |

Sauté garlic, onion, shrimps, and pork; add shrimp stock and boil. Add cabbage and continue cooking until tender. Season with toyo, salt and pepper. Add BUKO and mix well. Serve with calamansi in halves.

BUKO MOCK VALENCIANA

- | | |
|--|---|
| 2 cups buko, diced | 2 red sweet peppers, broiled, peeled, and cut in pieces crosswise |
| 8 cups thin coconut milk | 4 tablespoons fat |
| 1 spring chicken, dressed and cut in pieces | 2 eggs, hard boiled and sliced thinly, crosswise |
| 3 cups "malagkit" (glutinous rice), washed and drained | 2 segments garlic, minced |
| 1 cup boiled soy beans, or 1 cup boiled sweet green peas | Salt to taste |
| | Banana leaves |

Sauté garlic; add chicken; season with salt and cook until brown. Add COCONUT milk. Bring to a boil; add "malagkit" and stir well. Cover with pieces of banana leaf. Stir from time to time to prevent burning. When almost done, add the greater portion of soy beans or boiled sweet green peas

and pepper, leaving the rest for garnishing. Add BUKO, and mix well; continue cooking until done.

Place in a platter and garnish with the remaining soy beans, pepper, and the sliced hard boiled egg. Serve hot.

SHRIMP STUFFED WITH BUKO

- | | |
|----------------------|---------------------------------|
| ¼ cup buko, shredded | 2 tablespoons starch |
| 1 egg | 1 teaspoon green onion, chopped |
| “Unto sin sal” | finely |
| 2 tablespoons flour | Pepper and salt to taste |
| “Ticoy” cover | Fat for frying |
- 12 fair-sized shrimps

Shell shrimp but do not remove tail. Open back with knife and fill with mixture of shredded BUKO mixed with small amount of finely chopped green onions, salt, and pepper. Wrap with “unto sin sal” lined with “ticoy” cover, and dip in mixture of well-beaten egg, starch, and flour. Fry in deep, hot fat. Serve hot.

MOCK MACARONI SALAD

- | | |
|---|--|
| 2 cups buko (malakanin) grated
with “makapuno” grater | ple is sour, boil in 1 to 1
syrup 5 minutes; cool, and
drain.) |
| ½ cup boiled chicken, flaked | ¼ cup grated cheese |
| ½ cup sweet pickles, cut in strips | 1 cup mayonnaise |
| 1 cup pineapple, cut in strips and
drained well. (If the pineap- | |

Mix all ingredients and chill. Garnish and serve.

BUKO SALAD

- | | |
|--|---|
| 2 cups buko, cut in small squares | ¼ cup shrimp, boiled and cut in
pieces |
| ½ garden beet, boiled and cut in
small cubes | 10 “camias” or sweet pickles, diced
finely |
| 3 regular sized potatoes, boiled
and cut in small cubes | 2 green onions, washed and cut
in small pieces |
| 1 carrot, boiled and cut in small
cubes | Salt and pepper to taste |

Marinate all ingredients and drain well. Add mayonnaise and salt; chill. Garnish and serve cold.

MAYONNAISE

- | | |
|--------------------|-----------------------------------|
| ¼ teaspoon pepper | 2 tablespoons calamansi juice |
| ½ teaspoon mustard | vinegar |
| 1 teaspoon sugar | 1 egg yolk |
| 1 teaspoon salt | 1 cup coconut oil, highly refined |

Mix dry ingredients, add egg yolk and beat well. Add 1 teaspoon calamansi juice or vinegar. Add oil in very small quantities, beating constantly while adding. Continue adding oil slowly until it is all used. Add the remaining calamansi juice or vinegar, beating vigorously while adding.

BUKO SCONES

½ cup buko	⅓ tablespoon shortening
1 cup flour	1 egg
1½ teaspoons baking powder	¼ cup milk
2 tablespoons sugar	¼ teaspoon salt

Sift dry ingredients three times and work in shortening. Beat egg and add to the milk. Add mixture to dry ingredients and mix well to form dough. Roll to 1/2 inch thick on a floured board and cut in a biscuit cutter. Brush top with butter and sprinkle with sugar. Bake in hot oven until brown.

BUKO DELIGHT

½ cup buko, cut to small pieces	½ cup water
¼ cup green corn chopped fine	3 drops vanilla extract
½ cup sugar	

Boil corn with water until tender. Add sugar and BUKO. Continue boiling until it reaches the consistency of a jam. Add vanilla just before removing from fire and pour mixture in a mold. Cool before serving.

BUKO "PASTELITOS"

1 cup buko, sliced fine	1 egg, slightly beaten
½ cup sugar	1 tablespoon cassava starch
1 teaspoon vanilla	

Cook BUKO and sugar together. When thick, remove from fire and allow it to cool. Mix beaten egg and starch and add to the first mixture. Continue cooking till it thickens. Add vanilla and set aside. Prepare the dough as follows:

1 cup sifted flour	4 tablespoons cold water
4 tablespoons shortening	1 egg
¼ teaspoon salt	

Sift flour and salt. Add shortening and work with two knives. Add water by spoons and work with the fingers. Roll dough to a thin sheet and divide into halves. Spread filling thinly and evenly on one half of the sheet and cover it with the other half.

Press well and cut in uniform pieces of 1/2 inch wide and 1-1/2 inches long. Brush top with beaten egg and bake until brown.

MASAPAN DE BUKO No. 1

3/4 cup sugar
1 cup ground buko
1 tablespoon wheat or cassava flour

Mix BUKO and sugar and cook until thick. Add the flour made to a thin paste by cooking it with water. Continue cooking until thick enough to be shaped into desired forms. Bake in a greased baking tin until brown.

MASAPAN DE BUKO No. 2

2 cups ground buko
1 cup milk
1/2 cup sugar
1 egg

Mix BUKO, milk, sugar, and egg and cook until thick. Add flour made by cooking to a thin paste with a small amount of water, and continue cooking until the mixture thickens. Form into balls. Bake in greased baking tin until brown. Brush with butter when done.

MASAPAN DE BUKO No. 3

2 cups finely chopped buko
3 cups sugar
1 large can evaporated milk
4 eggs
2 tablespoons butter
1 teaspoon finely chopped lime
(dayap) rind or 1/2 teaspoon vanilla
1 tablespoon corn starch

Mix BUKO, sugar and milk. Cook in a "tacho" (copper vat) over a moderate fire. When thick, remove from fire to cool. Beat egg yolks, corn starch and lime rind, or vanilla, together. Add to buko-sugar mixture and cook again to a thick consistency to form soft balls. Add butter just before removing from fire. Mix well.

Place in paper candy cups and brush top with egg white beaten with a small amount evaporated milk. Bake in moderate oven until light brown.

"BUKO" PUDDING No. 1

Meat of 2 bukos, shredded
1 tablespoon butter
1 egg
1/2 cup coconut milk
1 teaspoon vanilla
3 tablespoons cassava flour
1/3 cup sugar

Mix BUKO, milk, sugar, and melted butter. Add well beaten egg and flour. Pour into a greased baking dish, set in a pan of hot water and bake in a moderate oven.

"BUKO" PUDDING No. 2

½ cup chopped buko	1 cup milk
1½ tablespoons cornstarch	1 egg
½ cup sugar	1 teaspoon vanilla

Make a thin paste with cornstarch and milk. Put in a double boiler, and boil 15 minutes. Remove from the fire and add beaten egg. Add BUKO, sugar, and vanilla. Put again on the fire and stir constantly until thick, and creamy. Transfer to a mold and place in the refrigerator to chill. Serve cold.

BUKO SURPRISE

Meat of buko, diced	1 cup refined sugar
8 strips gulaman (agar-agar)	1 cup water
	1 teaspoon vanilla

Wash gulaman; boil in one cup water until dissolved. Add sugar and let boil. After 2 minutes boiling, strain through a piece of cheese cloth. Color, if desired, with a small amount of certified food coloring. Add well drained young coconut (BUKO). Add vanilla. Mix well, pour into molds and set aside to cool. Stir twice at about 5 minutes interval, to distribute meat evenly. Allow to cool. Remove from mold and serve cold. Enough to serve 12 persons.

BUKO SHORT CAKE

Meat of 2 bukos	2 teaspoons baking powder
2 tablespoons milk	¼ teaspoon salt
1 tablespoon sugar	1½ tablespoons shortening
	1 cup flour

Sift dry ingredients together. Work in butter or other shortening; add milk to make a soft dough. Roll on floured board to desired thickness and cut with a biscuit cutter. Bake in a hot oven 20 to 25 minutes. Split batter, and fill with shredded coconut previously sweetened with sugar and chilled. Top with the shredded coconut mixture. Serve with coconut cream ("kakang gata") and sugar.

BUKO-CHOCOLATE CAKE

½ cup buko	¼ cup milk
1½ cups flour	2 tablespoons cocoa
½ teaspoon baking powder	¼ cup butter
½ cup sugar	½ teaspoon salt
1 egg	

Melt butter and add the cocoa. Remove from fire, add sugar, and beat well. Add well-beaten egg and grated BUKO. Mix in the milk alternately with flour sifted with baking powder and salt. Pour in a greased cake pan and bake it in a hot oven 30 to 40 minutes.

BUKO COOKIES

½ cup buko (shredded)	¼ cup shortening
½ cup sugar	1 tablespoon milk
1 cup flour	1 teaspoon baking powder
1 egg yolk	¼ teaspoon salt

Cream shortening and sugar. Add egg yolk and BUKO, and mix well. Add milk, then flour sifted previously with the dry ingredients. Mix, transfer to a floured board, and roll to ¼ inch thick. Cut with a cookie cutter and brush with egg yolk. Bake in a moderate oven until brown.

BUKO FANCIES

1 cup buko, finely chopped	¼ teaspoon vanilla
½ cup flour	⅓ teaspoon salt
½ cup sugar	2 eggs
2 teaspoons melted butter	

Beat eggs well; add sugar and continue beating; add melted butter and the other ingredients. Blend well. Put in buttered muffin pans and bake until slightly browned.

BUKO DESSERT

3 cups buko, diced	½ cup tapioca pearls
1 cup ubi, diced	½ teaspoon toasted anis seeds
1 cup gabi, diced	2 cups thick coconut milk
1 cup saba, diced	10 cups thin coconut milk
1 cup nangka, diced	3 cups sugar

Boil tapioca, ubi, and gabi in thin COCONUT milk, stirring constantly. When half done, add saba and nangka. When all ingredients are tender, add sugar and BUKO. Boil 2 minutes and add anis before removing from fire. Serve with thick COCONUT milk.

BUKO-CONDOL PARADISE

1 cup buko (malacatin), grated	1/4 teaspoon vanilla or grated lemon peel, chopped fine
1 cup condol, chopped finely	1 egg yolk
1 tablespoon corn starch or flour	1 1/2 cups sugar
1 cup coconut milk	1 cup evaporated milk

Mix BUKO, condol, sugar, COCONUT, and evaporated milk. Cook in copper vat. Stir constantly while cooking to prevent burning. When half done, remove from fire. Beat egg yolk slightly, add to BUKO mixture, and stir well. Add flour from sifter; then vanilla or lemon rind. Cook mixture to soft ball stage. Remove from fire. Drop in paper candy cups, or greased baking pan and bake until light brown.

FIESTA BUKO CUPS

2 cups buko, cut in pieces	2 eggs
1/2 cup bread crumbs	1 cup milk
1/4 teaspoon cinnamon or vanilla	1/2 cup water
2 tablespoons raisins	1 cup sugar

Beat eggs; add sugar, milk, bread crumbs, BUKO, raisins, and flavoring. Mix thoroughly.

Pour in muffin pans previously lined with caramel syrup.

Bake in moderate oven placing muffin pans in pan half filled with boiling water.

BUKO CUSTARD

1 cup buko, sliced in pieces	1 tablespoon lemon rind
1 cup coconut milk	1 cup sugar
1 cup milk, evaporated	1 cup brown sugar
4 egg yolks	1/3 cup water
2 egg whites	

Beat egg yolks and whites together; add sugar, lemon rind, COCONUT and evaporated milk, and BUKO. Set aside. Caramelize brown sugar and add water to make thick syrup. Line mold with caramelized syrup and when cooled, fill mold 2/3 full with custard BUKO mixture. Cook in moderate oven or in boiling water, covering mold with a sheet of tin on which is placed live charcoal.

BUKO ICE

3 cups buko, (very soft) scraped with a teaspoon	9 cups coconut water
	3 1/4 cup sugar

Mix all ingredients and freeze.

Separate 1 cup of mixture and add green food coloring. Color the rest with red. Continue cooking to soft ball stage. Transfer to a greased board. Shape into strawberries. Make small leaves out of the green mass and place on each stem end. Insert a piece of green colored toothpick on the stem end to resemble fresh strawberry. Dot with a few anise seeds.

COCONUT HAM

14 cups grated coconut, finely chopped	16 tablespoons glucose
6 cups ripe papaya pulp, mashed	6 tablespoons calamansi juice
	40 pieces cloves

Cook all ingredients together in a copper vat, stirring while cooking, until thick. Set aside 2 cups in one container, 4 cups in another and color the remaining portion with a mixture of 2 teaspoons red food coloring, 1 teaspoon green, and 1 teaspoon of violet, so that it will resemble the color of the meat of cooked ham. Transfer to a platter and shape to a leg of ham.

Color the 2 cups COCONUT mass with yellow, roll out to a thin sheet, and cover the mass in the platter, pressing well so that the sheet sticks to the ham-like mass.

Color the 4 cups portion with a mixture of red, green, and violet for coloring to imitate the browned surface of the cooked ham after having been sprinkled with sugar and scorched with a red hot flat iron. Roll out to a sheet and cover the entire leg.

COCONUT CALAMANSI

5 cups coconut, grated and chopped finely	1 cup grated peel of ripe calamansi
2 cups ripe papaya, mashed	4 cups sugar
	7 teaspoons calamansi juice

Cook all ingredients in a copper vat, stirring while cooking until thick enough to form into soft balls. Add green food coloring to obtain the natural color of a green calamansi fruit. Continue cooking to soft ball stage. Place on a greased board and shape to resemble calamansi fruit. Stick a piece of toothpick dyed green, on stem end.

COCONUT TOMATO

2 cups sugar	4 tablespoons glucose
3 cups grated coconut, chopped finely	4 teaspoons calamansi juice
1 cup tomato pulp	Red food coloring
	Green food coloring

Cook COCONUT, tomato, sugar, and glucose in a copper vat, stirring constantly until half done. Add calamansi juice and stir well. Separate 1 cup of COCONUT mixture, and color green. Color the remainder with red. Continue cooking both separately until done. Shape the red mixture so as to resemble tomato. Shape the green mixture to forms resembling sepals and attach to stem end of each tomato-shaped COCONUT with a piece of toothpick dyed green.

COCONUT SWEET RED PEPPER

3 cups grated coconut, chopped finely	1/3 cup glucose
1 cup ripe papaya, mashed	2 cups sugar
	3 teaspoons calamansi juice

Cook and follow the same procedure under COCONUT TOMATO, shaping to forms resembling large, sweet red pepper.

RAINBOW BUKAYO

6 cups grated coconut	8 tablespoons glucose
3 cups ripe papaya, mashed	2 teaspoons vanilla
3 cups sugar	Food coloring: red, green, and light orange.
8 tablespoons calamansi juice	

Cook COCONUT, sugar, papaya, and glucose in a copper vat until half done. Add calamansi juice, and cook until mixture is done. Divide the mixture into 3 equal parts, coloring each part with a different food coloring. Continue cooking each mixture to soft ball stage. Add vanilla just before removing from fire. Place on a greased board and roll to about 1/2 inch thick. Place each colored mixture on top of each other. Press with a rolling pin and smoothen the surface. Put aside to cool. Cut into bars, roll in sugar, and wrap in wax paper.

COCONUT BACON

Mixture No. 1:

4 cups grated coconut, chopped finely	4 tablespoons calamansi juice
2 cups ripe papaya pulp, mashed	1 teaspoon vanilla
	Red coloring
	2 1/2 cups sugar

Mix all ingredients except calamansi juice and vanilla. Cook in a copper vat until thick. Add calamansi juice, vanilla, and red coloring, and continue cooking until it thickens to such a consistency that it will form to any desired shape. Place on a greased board and cool. Divide into 4 equal parts and roll each to about 1/4 inch thick.

Mixture No. 2:

4 cups grated coconut, finely chopped	1 teaspoon vanilla
2 cups sugar	3 teaspoons calamansi juice
	Lemon yellow food coloring
4 tablespoons glucose	

Mix COCONUT, sugar, and glucose and cook in a copper vat (tacho). Stir while cooking. When thick, add yellow color, vanilla, and calamansi juice. Continue cooking until it reaches the consistency as described in Mixture No. 1. Divide into 5 equal parts and place on a greased pan. Roll each portion to a sheet about 1/5 inch thick.

Place all pieces, one on top of another, alternating the red and white sheets. Press with a rolling pin to bring the pieces together so as to form one single mass. Smoothen the sides. Slice thinly, as in bacon before serving.

COCONUT BOLOGNA

10 cups grated coconut, chopped finely	3 teaspoons red food coloring
4 cups ripe papaya pulp	1 teaspoon yellow food coloring
1 cup tomato pulp	* 1 teaspoon green food coloring
6 cups sugar	1/2 teaspoon violet food coloring
1 teaspoon vanilla	1 cup glucose
1 cup pili nuts, chopped	2 cellophane tubes of 2 1/2 inches in diameter and 10 inches long.

Cook the coconut, papaya, tomato, sugar, and glucose in a copper vat until half done. Add the food coloring by drops until the "bologna" color is obtained. Continue cooking and stir until done and place on a greased board to cool. Work with the fingers to make the mixture smooth. Mix the pili nuts. Shape the mixture into balls to facilitate the filling of the cellophane tubes. Twist the ends of the tubes to pack the mass tightly in tube. Tie ends. Hang overnight. Slice to thin pieces crosswise. These pieces may be used as sandwich filler.

* Food color should conform to current Good Manufacturing Practices. Use only food grade certified food colors.

COCONUT SAUSAGE

8 cups coconut, grated and finely chopped	6 cups sugar
3 cups ripe papaya, mashed	12 tablespoons glucose
	Food coloring: red and green
½ cup calamansi juice	

Mix all ingredients and cook in a copper vat. When half done, drop red and green food coloring to the mixture until meat color is obtained. Continue cooking until it reaches a consistency that will form to any desired shape. Place on a greased board and cool. Roll to long, smooth forms resembling "hot dogs" of about 1/2 inch in diameter and 5 inches long. Wrap in cellophane; tie ends and hang overnight to harden.

MAGIC COCONUT EGGS

Mixture No. 1:

4 cups grated coconut, chopped finely	1 tablespoon calamansi juice
2½ cups sugar	½ teaspoon vanilla
2 egg whites	½ cup powdered "Sea Island" sugar
	6 tablespoons glucose

Mix COCONUT, sugar, and glucose. Cook in a copper vat and stir constantly. When half done, add calamansi juice and continue cooking until soft balls may be formed. Add vanilla just before removing from the fire. Add egg whites previously beaten stiff with some island sugar. Place in a greased board and set aside.

Mixture No. 2:

Mix COCONUT, papaya and glucose. Cook in a copper vat and stir well. When half done, add calamansi juice and continue cooking until it reaches a consistency so that any desired shape may be formed. Put on a greased board and allow to cool. Form to small round balls, the size of an egg yolk. Cover uniformly with Mixture No. 1 and form to resemble eggs. Smoothen the outside by rolling on marble, or a smooth board.

EASTER COCO EGGS

Follow the same procedure as in MAGIC COCONUT EGG. Color the outside with certified red food coloring.

IMPROVED BUKAYO

3 cups grated coconut, chopped finely	6 tablespoons glucose
1½ cups sugar	8 tablespoons calamansi, chopped finely

Mix COCONUT, sugar, and glucose. Cook in a copper vat, stirring constantly to avoid burning. When half done, add calamansi and continue cooking until it reaches a temperature of 95° C.; or when it no longer sticks to the finger when touched. Place on a greased board. Form a mass 12 cm. long, and 4 cm. thick. Set aside to cool. Cut with a very sharp knife crosswise to produce bars of about 12 cm. long, 4 cm. wide, and 1-1/2 cm. thick.

Wrap each bar in a piece of wax paper and keep in well covered boxes.

HOLIDAY COCONUT BALLS

4 cups coconut, chopped finely	8 tablespoons calamansi, chopped finely (Chopped nangka, pineap- ple, and lime peel may be sub- stituted for calamansi.)
2 cups sugar	
8 tablespoons glucose	

Cook coconut, sugar, and glucose in a copper vat, stirring constantly while cooking. When half done; add calamansi or its substitute, and continue cooking until it reaches a temperature of 90° C. Cool and form to small balls. Wrap in wax paper.

COCONUT BRITTLE

1 cup grated coconut, toasted	1 cup sugar
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Melt sugar in a copper vat over a moderate fire. Stir constantly. Add COCONUT and mix. Pour on a greased board and roll to a thin sheet. Cut to desired pieces. Wrap in wax paper.

COCONUT HONEY

1 cup pure coconut milk	⅔ cup brown sugar
	1 cup glucose

Mix COCONUT milk, sugar and glucose. Cook in a copper vat (tacho) over a slow fire. Stir constantly while cooking and cook until it reaches a temperature of 105° C., or when it falls in a mass when dropped from a spoon. Fill in sterilized jar or can while boiling hot and seal hermetically.

PURE COCONUT COOKIES

1 cup grated coconut	1/3 tablespoon baking powder
1/2 cup shortening	1 teaspoon vanilla
1 egg, slightly beaten	1/2 cup sugar
1 cup flour (cassava)	

Cream shortening and sugar. Add egg, COCONUT, and mix well. Add flour sifted with baking powder; beat well. Add vanilla and mix. Drop by teaspoonfuls on greased cookie sheets. Bake in moderate oven until brown.

COCONUT WAFERS

1/4 cup grated coconut, toasted	1/8 cup shortening
1/8 cup coconut milk	1/2 teaspoon vanilla
1 1/2 cups cassava flour	1/8 cup sugar

Cream shortening and sugar. Add flour gradually, alternating with COCONUT milk. Add vanilla and mix. Line greased baking pan with paper and spread on it a thin layer of the mixture. Sprinkle over it toasted COCONUT and bake in moderate oven until brown.

SPECIAL COCONUT "LECHA FLAN" (CUSTARD)

2 cups thick coconut milk	1 cup sugar, refined
6 eggs yolks	1 tablespoon lime rind, grated
4 eggs whites	1 cup brown sugar

Dissolve brown sugar in 1/4 cup water and cook over a moderate fire until the sugar browns, or caramelizes. Line a suitable mold with 3/4 of the hot caramelized syrup evenly, and set aside. Stir the coconut milk into the remaining 1/4 of the caramelized syrup. Place over a low fire and stir continuously until all caramel is dissolved. Set aside.

Mix egg yolks, and slightly beaten whites and beat lightly to mix thoroughly. Add sugar and lemon rind. Then add coconut milk with caramelized syrup and mix well. Strain through a cheese cloth and pour in the mold previously lined with caramel. Cook slowly in a pan with hot water without allowing water to boil. After about 1-1/2 hours cooking, place a piece of plain metal sheet over the mold with a few pieces of live charcoal to brown top. Cool and unmold before serving.

COCONUT CAKE

1 cup coconut milk	4 egg whites
2 cups sugar	3 1/2 cup flour
4 egg yolks	4 teaspoons, baking powder

Beat egg yolks and add coconut oil, beating until smooth. Add sugar and continue beating until creamy. Add 2 egg yolks and beat again until fluffy. Add flour (previously sifted 3 times with baking powder) alternately with coconut milk in small amounts at a time. Lastly fold in egg whites stiffly beaten. Bake in moderate Palayok Oven 10 minutes.

MATAMIS NA BAO

Milk of 3 ordinary sized coconuts 1 cup glucose (333 grams)
3 cups refined sugar (315 grams)

Mix coconut milk, sugar, and glucose and heat in a tacho (Copper vat). When all sugar is dissolved, remove from fire and strain through cheese cloth to remove foreign bodies. Wash tacho. Pour in the strained mixture, and continue cooking until the mixture reaches a temperature of 105 degrees C. Pour hot in sterilized can and seal.

COCONUT POLVORON

1 cup coconut flour, toasted 6 drops vanilla
4 tablespoons sugar $\frac{1}{8}$ teaspoon salt
6 tablespoons sugar 2 tablespoons butter

Mix all ingredients thoroughly. Roll to a thin sheet and with the aid of a biscuit cutter, cut to pieces. Wrap in wax paper and store in well sealed containers.

SOMETHING OUT OF NOTHING

By Maria Y. Orosa

Of what use was coconut sapal before? I mean, grated coconut after extracting the milk from it. Well, for one thing we fed it to the pigs. Then, some very resourceful housewife would polish her bamboo floors with it. Most of the time we threw it away. Coconut sapal is still just coconut sapal. Only today we may bake delicious cakes and cookies from it because we can turn it into flour by a very simple home method.

We had many uses for coconut oil, but whoever thought of using it as shortening in place of butter or margarine and as salad oil? The Plant Utilization Division made attempts and

found it as reliable and good and, definitely, more economical. Wonderful emergency stand-bys, aren't they?

HOW TO MAKE COCO-OIL

Grate coconut finely. Squeeze the milk, using hand pressure. Add small amounts of hot water; work with hand to extract as much milk as possible, and squeeze out milk. Repeat this operation twice.

For every 3 cups of grated coconut use about 1 cup of hot water. (Use 1/2 cup of hot water per operation, or 1 cup for the two operations). Combine all extract (milk) and cook over a slow fire. When the oil begins to appear, add to the formula 1 pandan leaf, or about 1 teaspoon of grated lime peel or lemon peel and continue cooking until all oil is extracted.

From many experiments made, the following results have been obtained:

One regular sized coconut yields about 3 cups of grated meat, and about 1/3 cup of coconut oil. The oil made by the above process is very pleasant and may satisfactorily be used as a shortening and as salad oil. Cakes and cookies were made with this oil and proved to be very palatable. They cannot be distinguished from cakes made with butter. Mayonnaise made with this oil was found to be as tasty.

HOW TO MAKE COCO-MEAL

After extracting the milk from the grated coconut, the residue or sapal may be washed with hot water, dried in the sun or in a slow oven, ground to flour-consistency and there you have coco-meal or coconut flour.

COCONUT "SAPAL" CAKE WITH COCONUT OIL

3/4 cup coconut-sapal flour	2 1/3 teaspoons baking powder
1/4 cup cassava flour	1 teaspoon vanilla
1/3 cup coconut oil	1/2 cup coconut milk
4 eggs	Pinch of salt
1 cup sugar	

Beat egg yolks and add oil gradually, beating continuously. Add sugar and mix well.

Sift coconut flour, cassava flour, baking powder, and salt three times. Add to first mixture alternately with milk. Add

vanilla. Fold in stiffly beaten egg whites. Pour in greased cake pan and bake in moderate palayok-oven 20 minutes.

COCONUT MAJA BLANCA

1 cup cocomeal	4 cups coconut milk
1 cup corn flour	Anis and latik to garnish
	1 cup sugar

Mix cocomeal and corn flour. Add coconut milk. Stir well, and cook in an open vessel, stirring while cooking. When half done, add sugar and cook until well done.

COCONUT CREAM

Extract cream of coconut without adding water and use 1 tablespoon of this for every cup of coffee.

COCONUT BUTTER



Grate coconut finely and press out cream. Add 1 cup hot water to the residue and work with hands. Extract milk and add to cream. Repeat this operation at least twice. Place milk in a receptacle and let stand at least an hour. Skim top for cream. Place in a jar with a small piece of ice. Cover jar tightly and shake vigorously until all fat gathers in one mass. Take out from jar and work with fork in a wooden bowl to remove moisture. Add a small amount of refined salt and mix

well. Place in a container and cover. Keep in a refrigerator to keep solid. If desired, a small amount of more solid fat such as purico, may be added.

Coloring may be added to make it more attractive. Achuete makes a satisfactory coloring agent.

Chapter III

SOY BEANS AS A COMPONENT OF A BALANCED DIET AND HOW TO PREPARE THEM*

By Maria Y. Orosa

Formerly Chief, Division of Food Preservation
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WITH THE ASSISTANCE OF THE MEMBERS OF THE
DIVISION



INTRODUCTION

The soy bean is also known as soya bean or soja bean. In botany it was referred to as *Glycine hispida*, but now the botanical name of the plant has become *Glucine max*, under the international rules of botanical nomenclature. It has been known in china and Japan for several thousand years. Adolph and Kiang¹ state that the use of the soy bean in China dates

¹ The Nutritive Value of Soy-bean Products, Nat. Med. Journ. 5 (1919)
Popular Bulletin — January 23, 1932

back to the beginning of China's agricultural age under the emperor Shen Nung and that it is mentioned in the Ben Tsao Yang Mu written by Shen Nung in the year 2838 B.C.

The soy bean is a native of eastern Asia. When and by whom the soy bean was first introduced into the Philippines, no one can ascertain. The Filipino people have long known some important soy-bean preparations, such as soy sauce, or "toyo", bean curd, or "tokua," fermented bean curd, or "tahu-ri," not knowing that they were prepared from this bean. The seed is known in some parts of the Philippines, where it is grown, as "utao."

Since 1880 the soy bean has been a farm crop in the United States but during the early years of its introduction it was utilized only as a forage crop. Later the value and uses of the oil became known both in America and Europe. Due to the scarcity of cottonseed and linseed oil, coupled with proof that the soy bean is easy to grow, easy to harvest, easy to handle and is not as easily attacked by insects as other seeds, America and Europe began to devote more attention to the growing of the soy bean for its oil. The meal is used as animal food and as fertilizer. The oil is now used in the manufacture of soap, paint, candles, artificial rubber, linoleum, water-proofing, liquids, enamels and waterproof goods, such as cloth, umbrellas and lanterns, lacquer for varnish and printing ink, and in the manufacture of certain foodstuffs, as salad oil and butter substitutes. Baked soy beans, pork and bean style; soy-bean flour; and soy-bean meal are now being put on the market by American and European industries.

The soybean for several thousands of years has been utilized by the Chinese and Japanese as food. Some of the soy-bean preparations are consumed in these countries three times a day. The Chinese people do not use dairy products and most of them consume only a small amount of meat. Despite these facts, the Chinese people have lived for centuries on what appears to be a well-balanced diet through the use of the soy bean.

The main object of this pamphlet is to encourage the Filipino people to use more soy beans, and preparations made from them, as food. It is an accepted belief that Filipinos do not eat a well-balanced diet. One reason for this is the limited earning capacity of many of us, which prohibits the purchase

of foods that have the necessary proteins and fats, such as meat, eggs, milk, etc. Rice, which is mostly starch, and on which many of us depend for our living, cannot supply our bodies with the proteins and fats necessary for health. Protein must be obtained by the body for the building of tissues, and the rebuilding of the wear and tear of fatigue. People who cannot well afford to eat expensive protein use liberally soy beans in their diet. Experiments by different food experts indicate that 20 per cent soy beans and 80 per cent rice make a well-balanced diet as far as protein and fat are concerned.

In considering the food value of the soy bean, Daniels and Nichols,² and Osbourne and Mendel³ found that it averages a high percentage of physiologically useful protein, a considerable amount of energy-yielding fat and carbohydrate, and sufficient fat-soluble vitamin A and water-soluble vitamin B. In addition to the fact that the soy bean is rich in protein, this protein, unlike that of all other vegetables, is similar to animal protein or to the protein of the human body. The different kinds of protein contain a number of different amino acids. Generally, plant proteins seem to lack some of the active amino acids, and the soy bean is an exception. McCollum says, "Its proteins which are adequate when fed at a plane corresponding to 17 per cent or more of the diet, can support growth when they form the sole protein supply." Horvath says, "The soy bean protein is a complete protein containing all the essential amino-acids necessary for the building up of the protein of the human organs."

Science has found that besides carbohydrates, fats proteins, and minerals the body needs substances called vitamins. Bureau of Science tests have shown that polished rice, which most of us eat, is deficient in vitamin B. McCollum found it deficient in vitamin A. Horvath found the soy bean to contain vitamins B and B₂ also called F and G. Other investigators found vitamins A, D, E, and C.

While the addition of soy beans to rice would add vitamins to the diet and considerably improve its quality, particularly in reference to the deficiency of vitamins A and B, it would probably be better not to depend entirely on soy beans and rice for

² Journ. Biol. Chem. 32 (1917) 91

³ Proc. Soc. Exp. Med. 14 (1917) 174; Journ. Biol. Chem. 32 (1917) 369.

vitamins, but to add fruits and vegetables, particularly leafy vegetables. However, the addition of soy beans would probably improve the vitamin content of the diet of most of the poorer classes and make it possible for them to secure such additional vitamins at a nominal cost.

Soy-bean flour is now being prepared by several factories in Europe and America and is especially valuable for diabetic patients, as it contains only a very small percentage of starch.

Soy-bean milk is used in China much as cow's milk is used in the United States. Preparations requiring milk can be successfully made by using soy-bean milk instead of canned milk or fresh cow's or carabao's milk. In the Philippines the use of soy-bean milk will be very beneficial, because of scarcity and the high cost of milk.

In considering a suitable diet for the poorer classes, the question of price must always be of paramount importance. If beans were grown or imported in larger quantities they would probably be cheaper than they are at present, and substituting part of the rice in the diet by soy beans would not increase the price of the diet.

Soy beans are grown in some parts of the Philippines. According to Doctor Roxas, Director of the Bureau of Plant Industry, 2,481 tons were grown in Batangas in 1921 and 4,218 tons, in 1930. However, the importation of soy beans in 1924 was 4,657 tons. Doctor Roxas states that soy beans can be grown in all parts of the Philippines. In campaigning to teach the public the proper methods of cooking soy beans will result in this article of diet being widely and liberally used by the Filipino people as a means of improving health and lessening disease. Let us keep in mind the saying "An ounce of prevention is worth a pound of cure."

In order to give the reader an idea of the food value of the soy bean, Table I shows the composition of soy beans and of some of the most nourishing common foods.

Table I—COMPARISON OF THE FOOD VALUES OF SOY BEAN AND OTHER COMMON FOODS *

Name of food.	Protein.	Fat.	Car- bohy- drates.	Ash.	Water.	Calories per pound.
	Per cent	Per cent	Per cent	Per cent	Per cent	
Soy bean	34.00-40	16.8-20	33.7	4.7	10.8	1,970
Mung bean (mongo) ...	23.8	2.0	59.0	3.8	11.4	—
Rice	8.0	2.0	77.0	1.0	12.0	1,720
Corn	10.0	4.3	73.4	1.5	10.8	1,800
Navy bean (habicuelas) .	22.5	1.8	59.6	3.5	12.6	1,605
Peas	24.6	1.0	62.0	2.9	9.5	1,655
Lima bean (patani)	18.1	1.5	65.9	4.1	10.4	1,625
Wheat	12.2	1.7	73.7	1.8	10.6	1,750
Eggs	14.8	10.5	—	1.0	73.7	720
Beefsteak	18.6	18.5	—	1.0	61.9	1,130
Porkchops	16.9	30.1	—	1.0	52.0	1,580
Peanuts	25.8	38.6	24.4	2.0	9.2	2,560

COOKING OF SOY BEANS

Immature soy beans may be cooked in the same way as lima beans (patani). The matured beans are hard and like many beans of similar texture they require thorough soaking (about 3 hours). We have found that soaking longer than five hours often results in a longer cooking period being necessary to soften the beans. If, after soaking, the beans are merely placed in water and boiled, it will take some time to cook the beans thoroughly soft. However, if the soaked beans are ground fine they can be cooked in a short time. Ground beans can be mixed with rice in any desired proportion and cooked with the rice or added to soups or stews.

The time necessary to soften whole beans can be reduced somewhat by adding table salt to the water they are cooked in. The most convenient method of cooking would be, of course, to use a pressure cooker, but since this is not usually found in the ordinary home, we devised the following substitute method which is simple, cheap, and very satisfactory.

Wash the soy beans thoroughly with water.

Soak from 3 to 5 hours.

Place in water containing a small amount of salt ($\frac{2}{3}$ tablespoonful salt to 1 quart of water) and bring to a boil. While boiling transfer to a mason jar and half seal the jar.

Place the jar in a pan containing a boiling saturated solution of salt. The pan should be provided with a rack to prevent contact of the jar with the pan. Boil for 3 hours or more.

SOY BEANS BOILED WITH RICE, I

$\frac{1}{3}$ cupful soy beans (soaked 3 hours)	$\frac{2}{3}$ cupful rice 1 cupful water
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Pass the soaked soy beans through a meat grinder and add this to the rice previously washed with water. Add 1 cupful of water and a few pinches of salt and boil slowly in a covered pan until the water has dried out.

SOY BEANS BOILED WITH RICE, II

$\frac{1}{3}$ cupful soaked soy beans (not ground)	2 cupfuls water A few pinches of salt
$\frac{2}{3}$ cupful rice	

Boil the soy beans, water, and salt together in a covered pan until the water has all dried out.

SOY BEANS BOILED WITH RICE, III

$\frac{1}{2}$ cupful soaked soy beans (ground)	A few pinches of salt
$\frac{1}{2}$ cupful rice	1 cupful water

Proceed as in Recipe No. 1

SOY BEANS BOILED WITH RICE, IV

$\frac{1}{2}$ cupful soaked soy beans (not ground)	2 cupfuls water
$\frac{1}{2}$ cupful rice	A few pinches of salt

Proceed as in Recipe No. II

ROASTED SOY BEANS

Roast the soy beans with a small quantity of lard and when well brown and crisp sprinkle over them a small quantity of salt.

SOY-BEAN BRITTLE

$\frac{2}{3}$ cupful roasted soy beans	A few drops of vanilla extract
1 cupful sugar	

Melt the sugar in a pan with the aid of a low fire. Increase the heat until the sugar boils. Add the roasted soy

beans and mix well. Pour on a buttered board and press the mass with a rolling pin to a thickness of $\frac{1}{4}$ inch. Cut with a knife in desired pieces. Lard may be used in place of butter.

SOY-BEAN SOUP NO. I

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|----------------------------------|------------------------------|
| 1 cupful boiled soy beans | 1 teaspoonful salt |
| 3 cupfuls water | 1 tablespoon kinchay, cut in |
| $\frac{1}{4}$ teaspoonful pepper | small pieces (native celery) |

Pass the boiled soy beans through a sieve. Add the water, salt, and pepper, and boil until the soup is somewhat thick. Add the kinchay leaves and boil 2 minutes.

SOY-BEAN SOUP NO. II

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| 1 cupful boiled soybeans | 5 pinches pepper |
| 3 cupfuls water | $\frac{1}{3}$ teaspoonful salt |
| 3 tablespoonfuls tomato paste | |

Mash the soy beans and pass through a sieve. Add the water and boil 15 minutes in a closed pan. Add the tomato paste, salt, and pepper, and boil until the soup thickens.

SOY-BEAN SOUP NO. III

- | | |
|--------------------------------|-------------------------------|
| 1 cupful boiled soy beans | 3 cupfuls water |
| $\frac{1}{3}$ teaspoonful salt | A small piece of ham or bacon |
| 5 pinches pepper | A few kinchay leaves |

Mash the soy beans and pass through a sieve. Add the water, salt, pepper, ham, and boil until the soup thickens. Remove the ham and drop in a few leaves of kinchay (native celery) and boil 1 minute.

SOY-BEAN SOUP NO. IV

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|--------------------------------|--------------------------------|
| 1 cupful boiled soy beans | 1 teaspoonful sugar |
| 3 cupfuls water | 5 tablespoonfuls coconut cream |
| $\frac{1}{2}$ teaspoonful salt | |

Mash the soy beans and pass through a sieve. Add the salt, sugar, and water, and boil until the soup thickens. Take the pan off the fire and add the coconut cream to the soup just before serving.

SOY-BEAN SOUP NO. V

- | | |
|--|----------------------------------|
| 1 cupful boiled soy beans | $1\frac{1}{4}$ teaspoonfuls salt |
| 3 cupfuls water | 1 teaspoonful chopped onion |
| 3 tablespoonfuls finely chopped red sweet pepper | A few pinches of pepper |

Mash the soy beans and pass through a sieve. Add the salt, pepper, water, and boil until the soup thickens. Then add the finely chopped sweet pepper, chopped onions, and boil 5 minutes longer.

SOY-BEAN SOUP NO. VI

½ cupful boiled soy beans	1 tablespoonful butter
2 cupfuls soy-bean milk	⅓ teaspoonful pepper
½ tablespoonful flour	⅓ teaspoonful salt

Make a sauce from the butter, flour, and soy-bean milk by browning the flour in the butter, adding to it the salt, pepper, and milk. Stir constantly while the milk is being added to prevent lumping. Cook the mixture about 5 minutes. Mash the boiled soy beans and pass through a sieve. Add this to the soup and cook until the soup thickens.

SOY-BEAN SOUP NO. VII

1 cupful boiled soy beans	1 teaspoonful chopped kinchay
2 cupfuls milk, or coconut milk	(native celery)
3 tablespoonfuls butter	1 teaspoonful salt
1 onion, finely chopped	¼ teaspoonful pepper
1 cupful water	

Melt the butter and fry the onion and kinchay. Add the soy beans, pepper, salt, and water, and boil 15 minutes in a covered pan. Mash and pass through a sieve. Add the coconut milk and boil again until the soup thickens.

SOY-BEAN SOUP NO. VIII

1 cupful soy-bean milk	1 tablespoonful lard
3 tablespoonfuls boiled soy beans	¼ onion
2 tablespoonfuls chopped shrimps	2 sections garlic
1 tablespoonful tikitiki flour	½ teaspoonful salt
(darak)	2 pinches ground pepper

Pound together in a mortar the boiled soy beans, shrimps, ½ of a medium-sized onion, and one section of garlic. Season with ¼ teaspoonful of salt and pinch of pepper. Stir the tiki-tiki flour into the mixture and form it into small balls. Fry the balls in hot fat until brown.

Make the shrimp soup from the head and shell of the shrimps, by pounding them in a mortar, adding to them about ½ cupful of water, boiling it slowly about 5 minutes and straining it through a sieve.

Sauté in the lard the remaining garlic $\frac{1}{2}$ of an onion, both chopped very fine, and when brown add the shrimp soup. Boil a few minutes and add the soy-bean milk. Season with the rest of the salt ($\frac{1}{4}$ teaspoonful) and pepper (a pinch) and boil 5 minutes longer.

Drop the balls in the soup just before serving.

SOY-BEAN SOUP NO. IX

$\frac{1}{3}$ cupful boiled soy beans	2	tablespoonfuls lard
$\frac{1}{4}$ cupful fresh leaves of pepper (capsicum)	2	sections garlic, chopped fine
$\frac{3}{4}$ cupful rice washings (rice water)	2	tablespoonfuls chopped onion
1 tablespoonful fish sauce (patis)	1	tablespoonful ginger, cut in small pieces

Sauté the garlic, ginger, and onion in lard until brown. Add the patis and cook 1 minute. Then add the rice washings and boil for 4 minutes. Lastly add the boiled soy beans and the fresh leaves of pepper and continue boiling 5 minutes longer.

SOY-BEAN-ALUGBATI-LEAVES SOUP NO. X

$\frac{1}{2}$ cupful boiled soy beans	2	sections garlic, chopped
1 cupful young leaves of alugbati	2	tablespoonfuls lard
2 tablespoonfuls chopped pork	1	teaspoonful salt
$\frac{1}{2}$ onion, chopped	2	cups coconut milk
	1	cupful shrimp soup

Sauté the garlic, onion, and pork in lard. Pour the shrimp soup in the same pan and let boil. While boiling add the coconut milk, soy beans, salt, and the alugbati leaves. Boil for 2 minutes.

SOY-BEAN SOUP WITH DUMPLINGS NO. XI

1 cupful boiled soy beans	$\frac{1}{4}$ teaspoonful salt
2 tablespoonfuls butter	A few pinches of pepper
2 cupfuls water	

Mix the above and boil 5 minutes.

Mix the following:

$\frac{1}{4}$ cupful soy-bean milk	$2\frac{1}{2}$ tablespoonfuls flour
$\frac{1}{2}$ teaspoonful butter	1 egg
$\frac{1}{8}$ teaspoonful salt	

Boil the milk, butter, and salt, and while hot, add the flour at once. Take the pan from the fire and stir very rapidly to avoid lumping. Put the pan back on the fire and cook the

dough a few minutes longer. When the dough is thoroughly cooked cool it about 1 minute. Mix with it 1 whole egg and drop the dumplings by $\frac{1}{2}$ teaspoonfuls in the boiling soup. Cook the dumplings in the boiling soup 2 minutes.

SOY-BEANS WITH BAGOONG

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| 1 cupful boiled soy beans | 1 section garlic |
| 1 tablespoonful bagoong (salted, fermented fish) | 2 tablespoonfuls vinegar |
| | 2 tablespoonfuls lard |
| $\frac{1}{2}$ onion, cut fine | |

Sauté the garlic and onion in lard. Add the bagoong to the vinegar and add this mixture to the pan containing the garlic and onion. Boil, without stirring, 2 minutes. Add the soy beans and continue the cooking for 2 minutes.

SOY-BEANS WITH ALAMANG

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|---------------------------------------|--|
| $\frac{3}{4}$ cupful boiled soy beans | 1 tablespoonful lard |
| $\frac{1}{4}$ of an onion, chopped | 1 tablespoonful alamang (salted, fermented shrimp) |
| 1 section garlic | |

Sauté garlic and onion in lard. Add the alamang and soy beans, and cook in a covered pan for 2 minutes.

SOY-BEANS PINAKBET

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| $\frac{1}{2}$ cupful boiled soy beans | A small piece of pork cut in small pieces |
| 2 medium-sized tomatoes, sliced fine | 1 tablespoonful bagoong |
| 1 cake tokua, sliced | 1 cupful rice water |
| 1 eggplant, sliced to small pieces | $\frac{1}{2}$ ampalaya, sliced thin, crosswise |

Cook the tomatoes, bagoong, and pork, then add the soy beans, tokua, and rice water, and boil 3 minutes. Add the vegetables and cook until are tender.

SOY-BEANS WITH VEGETABLES

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| 1 cupful boiled soy beans | 4 tablespoonfuls onion, sliced |
| 1 tokua cake, sliced | 4 tablespoonfuls pork, sliced to small pieces |
| 4 tablespoonfuls sliced patola | 2 tablespoonfuls shrimp, sliced into small pieces |
| 6 tablespoonfuls sliced upo | 6 teaspoonfuls toyo |
| $\frac{1}{2}$ eggplant, sliced | $\frac{1}{2}$ cupful shrimp soup |
| 6 tablespoonfuls cabbage, sliced | |
| 2 tablespoonfuls garlic, chopped | 2 tablespoonfuls lard |

Sauté the garlic in lard until brown. Add the onion and fry again. Add the pork, tokua, and shrimp, and continue cooking 3 minutes. Then add the soy beans, and the vegetables

and continue cooking for several minutes. Finally add the shrimp soup and toyo sauce and boil 5 minutes.

TOKUA WITH KINCHAY

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| 3 tokua cakes cut to small cubes | A small piece of pork cut in small pieces |
| ½ cupful kinchay stems cut to ½ inch long | 1 section garlic, chopped fine |
| 1 teaspoonful salt | ¼ onion, cut fine |
| 3 tablespoonfuls lard | |

Sauté the garlic, onion, and pork in lard. Add the tokua and salt, and cook 3 minutes longer. Then add the kinchay and cook 1 minute more.

SOY BEANS WITH KANGKONG

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| ¾ cupful boiled soy beans | ¾ tablespoonful alamang |
| 2 cupfuls kangkong leaves and stems, cut to small pieces | ½ cupful rice water |
| | 1 tablespoonful coconut oil |
| 2 sections garlic, chopped | |

Sauté the garlic in oil. Add the soy beans and alamang, and cook, stirring constantly. Then add the kangkong leaves and stalks, and water. Cover the pan and boil 10 minutes, or until the kangkong is tender.

SOY BEANS WITH SQUASH

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| ¾ cupful boiled soy beans | ½ cupful water |
| 1 cupful sliced squash | ½ teaspoonful salt |
| 1 tablespoonful lard | ⅛ teaspoonful pepper |
| 1 section garlic, chopped | |

Sauté the garlic in lard until brown. Add the squash, water, salt, and pepper and cook covered. When the squash is tender, add the boiled soy beans and boil 5 minutes.

SOY BEANS WITH SQUASH AND SOY SAUCE

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|----------------------------|-----------------------|
| ½ cupful boiled soy beans | 2 tablespoonfuls toyo |
| ½ cupful sliced squash | ½ cupful water |
| 1 onion, cut fine | 2 tablespoonfuls lard |
| 3 sections garlic, chopped | |

Sauté in lard the garlic, onion, soy beans, and squash. Add the toyo and water, and boil until the squash softens, and the soup thickens.

SOY BEANS WITH SQUASH LEAVES

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|----------------------------------|------------------------------|
| 1 cupful boiled soy beans | 1 cupful rice water |
| 1 cupful sliced leaves of squash | 2 tablespoonfuls coconut oil |
| 2 sections garlic | 2 tablespoonfuls alamang |
| ½ onion, sliced | (fermented, salted shrimp) |

Sauté the garlic, onion, and alamang, in oil. Add the soy beans and the squash leaves (use only young tender leaves) and continue cooking 5 minutes. Finally add the rice water and let the mixture boil from 10 to 15 minutes.

SOY BEANS WITH MALUNGAY LEAVES

½ cupful boiled soy beans	1 cupful water
1 cupful malungay leaves	1 section garlic
1 tablespoonful bagoong	1 tablespoonful lard

Brown the garlic in lard and add bagoong; fry 1 minute. Add the water and soy beans and boil 5 minutes. Lastly add the malungay leaves and boil for 2 minutes.

SOY BEANS WITH AMPALAYA LEAVES

¾ cupful boiled soy beans	1 tablespoonful tomato sauce
1 cupful of ampalaya leaves	½ cupful water
1 tablespoonful lard	Salt to taste
2 sections garlic, chopped	A few pinches of pepper
½ onion, chopped fine	

Select the young leaves of the ampalaya and soak in water. Sauté the garlic, onion, and tomato sauce in lard. Add the water, salt, pepper, and soy beans, and cook 5 minutes. Then add the ampalaya leaves and cook 3 minutes longer.

SOY BEANS WITH HEART OF BANANA (Banana Flower)

¾ cupful boiled soy beans	¼ onion, sliced thin
2 cupful heart of banana, sliced to very fine, long pieces	½ cupful rice water
¾ tablespoonful alamang	2 sections garlic
	1 tablespoonful lard

Sauté the garlic and onion in lard. Add the heart of banana previously worked with coarse salt and pressed, and fry 5 minutes more. Then add the alamang, soy beans, and rice water, and cook 5 minutes.

SOY BEANS WITH BANANA FLOWER AND COCONUT MILK

1 cupful boiled soy beans	A small piece of ginger
1 cupful coconut milk	2 tablespoonfuls bagoong (salted, fermented fish)
1 cupful finely sliced banana flower	¼ cupful coconut cream
4 sections garlic	

Boil the coconut milk, with bagoong, garlic, and ginger. Work the banana flower with coarse salt and wash the salt out with cold water. Add this, together with the soy beans, to the boiling coconut milk and continue cooking until the soup is prac-

tically dried out. Then add $\frac{1}{4}$ cupful coconut cream and let the mixture boil not longer than 3 minutes.

SOY BEANS WITH PATOLA

$\frac{1}{2}$ cupful boiled soy beans	2 tablespoonfuls chopped onion
1 cupful sliced patola	1 tablespoonful chopped garlic
$\frac{1}{4}$ cupful pork, sliced	1 tablespoonful toyo
$\frac{1}{4}$ cupful sliced shrimp	2 tablespoonfuls lard
1 cupful shrimp soup	2 tablespoonfuls chopped tomatoes

Sauté the garlic, onion, and tomatoes in lard. Add the shrimp, pork, and toyo sauce, and cook 3 minutes. Add the shrimp soup and heat to boiling. Then add the patola and soy beans and cook until the vegetable is tender.

SOY BEANS WITH POTATO AND COCONUT MILK

$\frac{3}{4}$ cupful boiled soy beans	1 tablespoon lard
$\frac{1}{2}$ cupful coconut milk	2 sections garlic, chopped fine
1 small sweet potato, boiled and cut into small cubes	$\frac{1}{2}$ teaspoonful salt
	$\frac{1}{2}$ teaspoonful sugar

Sauté the garlic in lard. Add the soy beans, sweet potato, salt sugar, and the coconut milk, and boil 5 minutes.

SOY BEANS WITH LETTUCE

1 cupful boiled soy beans	1 tablespoonful butter
1 head of native lettuce	$\frac{1}{2}$ teaspoonful sugar
$\frac{1}{4}$ cupful milk	$\frac{1}{4}$ cupful water
1 egg yolk	$\frac{1}{2}$ teaspoonful salt

Wash the lettuce well, put in a stewpan with the boiled soy beans, butter, water, and salt, and cook about 5 minutes. Remove the lettuce, and spread the leaves on a plate.

Mix the milk and the egg yolk, and add this to the contents of the stewpan. Add the sugar, and cook slowly for 5 minutes, stirring constantly. Pour over the plate on which the lettuce leaves are spread.

SOY BEANS WITH GREEN ONION LEAVES

$\frac{3}{4}$ cupful boiled soy beans	1 section garlic, chopped fine
2 tablespoonfuls chopped green onion	2 tablespoonfuls chopped onion
2 tablespoonfuls sliced pork	1 tablespoonful lard
1 tablespoonful chopped shrimp	$\frac{1}{2}$ cupful shrimp soup
	Salt and pepper to taste

Sauté the garlic, onion, pork, and shrimp in lard. Add the soy beans, salt, and pepper and continue cooking a few min-

minutes. Then add the green onion and the shrimp soup remains.

SOY-BEAN GUINATAAN

¾ cupful boiled soy beans	1 cupful coconut milk
6 ripe guaves, peeled and sliced	¼ cupful coconut cream
1 medium-sized sweet potato boiled and cut into small cubes	½ cupful sugar 1 pinch salt

Place the sliced guavas and soy beans in a pan. Add the coconut milk, and boil a few minutes. Then add the sweet potato and continue boiling 5 minutes. Add the sugar, salt, and the coconut cream, and boil ½ minute.

SOY-BEAN KILAWIN

¼ cupful chopped soy beans	3 tablespoonfuls vinegar
¼ cupful sliced pork	1 teaspoonful salt
1 small raddish, sliced fine	¼ cupful water
2 sections garlic, chopped	A pinch of ground pepper
2 tablespoonfuls lard	

Sauté the garlic, sliced pork, raddish, and soy beans in lard. Add 3 tablespoonfuls vinegar, salt, pepper, and water, and boil until the raddish is tender but not soft.

SOY BEANS WITH PIG'S BLOOD (DINUGUAN)

½ cupful boiled soy beans	½ cupful water
1½ tablespoonfuls vinegar	¼ teaspoonful chopped garlic
4 tablespoonfuls pig's blood	1 tablespoonful lard
¼ cupful chopped pork	1 tablespoon sugar
2 tablespoonfuls chopped onion	¼ teaspoonful pepper
2 tablespoonfuls chopped tomatoes	1¼ teaspoonfuls salt

Soak the pork in 1 tablespoonful vinegar and 1 teaspoonful salt.

Sauté the garlic, onion, and tomatoes in lard. Add the pork and soy beans and fry 3 minutes longer. Add the water, sugar, pepper, 1 teaspoonful vinegar, ¼ teaspoonful salt, and the blood, previously stirred with a fork. Cook slowly for five minutes without stirring.

TOKUA TOCHO WITH SOY BEANS

1½ cakes tokua, sliced into thin pieces, ½ inch long	4	tablespoonfuls chopped tomatoes
½ cupful boiled soy beans	2	tablespoonfuls soy sauce
4 tablespoonfuls sliced pork	2	tablespoonfuls vinegar
2 tablespoonfuls ginger cut in thin slices, ½ inch long	1	tablespoonful tahuri
½ onion, sliced	½	cupful water
	3	tablespoonfuls lard
	4	sections garlic, chopped

Sauté the tokua, onion, and pork separately, in lard. Set them aside. Saute the garlic, ginger, and tomatoes in lard. Add the soy sauce, tahuri, boiled soy beans, the fried tokua, pork, and onion, and ½ cupful water. Boil for 5 minutes. Then add the vinegar and continue cooking, without stirring, for 5 minutes.

TOKUA WITH LIVER

1½ cakes sliced tokua	⅛	teaspoonful pepper
¼ cupful sliced liver	1½	teaspoonfuls salt
2½ tablespoonfuls vinegar	1	green pepper, sliced fine
2 tomatoes, sliced fine	½	onion, sliced thin, lengthwise
	1	tablespoonful lard

Soak the liver in 1½ tablespoonfuls vinegar with the salt and pepper. Sauté the onion, tomatoes, liver, and green pepper in lard. Add 1 tablespoonful vinegar, a few pinches each of a salt and pepper and the sliced tokua. Let simmer until liver is tender.

SWEET PEPPER STUFFED WITH SOY BEANS

1 cupful boiled soy beans	2	tomatoes, chopped fine
3 sweet peppers	1	egg
½ cupful ground pork	2	tablespoonfuls lard
½ cupful sliced shrimps	1	tablespoonful chopped garlic
3 tablespoonfuls soy sauce	1	tablespoonful tikitiki flour
3 tablespoonfuls chopped onion	A few	pinches of ground pepper

Sauté the garlic, onion, and tomatoes in lard. Add the shrimps and pork and fry for five minutes. Then add the soy beans, toyo sauce, and the ground pepper.

Roast the sweet pepper on charcoal, dip immediately in cold water, and peel. Remove seeds. Stuff the pepper with the above mixture. Roll in lightly beaten eggs mixed with tikitiki flour and fry in hot fat until brown.

EGGPLANT STUFFED WITH SOY BEANS

1 cupful boiled soy beans	3 eggplants
¼ cupful ground pork	1 egg
3 tablespoonfuls toyo	1 tablespoonful chopped garlic
½ cupful shrimps, sliced fine	A few pinches of pepper
3 tablespoonfuls chopped onion	1 tablespoonful rice bran

Sauté the garlic, onion, and tomatoes in lard. Then add the shrimp, pork, soy sauce, and pepper, and fry three minutes. Add the chopped soy beans and mix thoroughly.

Roast the eggplants over charcoal, dip in cold water, and peel. Remove the seeds. Stuff them with the above stuffing. Roll in lightly beaten egg previously beaten with the rice bran, and fry in hot fat until brown.

STUFFED TOKUA NO. 1

2 cakes tokua	6 tablespoonfuls chopped fat
1 tablespoonful chopped onion	pork
2 tablespoonfuls chopped tomatoes	3 tablespoonfuls lean pork
2 sections chopped garlic	¼ teaspoonful salt
1 tablespoonful lard	

Divide tokua cake into 4 equal parts. Slice each part to 4 thin slices and soak these in vinegar a few minutes before using.

Sauté the garlic, onion, and tomato, in lard. Add the lean pork and then the pork fat and salt, and fry 2 minutes.

Make sandwiches, using the slices of tokua in place of bread and the mixture as filler.

Wrap in omentum (unto sin sal) and fry in hot, deep fat until brown.

If omentum is not available, use lumpia wrapping instead.

Divide tokua cake into 4 equal parts and slice each part very thin.

Make sandwiches using tokua slices in place of bread, and using the following filler:

2 tablespoonfuls green onions, chopped	5 tablespoonfuls lean pork
1 egg	2½ teaspoonfuls or more of toyo sauce
2 tablespoonfuls bread crumbs	2 pinches of pepper
2 tablespoonfuls chopped shrimp	2 pinches sugar
10 tablespoonfuls fat (pork)	

Mix.

Fill the tokua slices and wrap each with omentum (unto sin sal) or lumpia wrapping.

Steam 15 minutes. Fry in deep hot fat.

SOY BEANS A LA VALENCIANA

½ cupful boiled soy beans	1½ cupfuls boiled rice
1 sweet pepper, sliced in long, narrow strips	½ onion, finely chopped
3 ripe tomatoes, chopped fine	2 tablespoonfuls lard
2 sections garlic, chopped	½ teaspoonful salt
	2 pinches pepper

Sauté the garlic, onion, and tomatoes in lard. Add the sweet pepper, soy beans, salt, pepper, and boiled rice. Cook about 5 minutes. Sprinkle some pimienta over it for coloring.

SOY BEANS WITH BANANA

½ cupful soy beans	¼ cupful chopped pork
¼ cupful saba banana, fried and sliced into small pieces	2 tablespoonfuls chopped onion
1 egg	1 teaspoonful salt
	½ teaspoonful sugar

Mix the above ingredients and fill into the cups of a small muffin pan. Cook covered in boiling water about 25 minutes. Place in a hot oven to brown the top before serving.

SOY BEANS WITH TOYO

1 cupful boiled soy beans	1 section garlic, chopped very fine
2 tablespoonfuls soy sauce	
1 medium-sized onion, chopped fine	1 teaspoonful calamansi juice

Mix the sliced onion, chopped garlic, soy sauce, and calamansi juice with the soy beans and let the mixture stand 5 minutes. Cook the mixture in a covered pan until the onions are tender.

FRIED TOKUA WITH TOYO AND VINEGAR

1 cupful sliced tokua	½ cupful water
2 tablespoonfuls sliced pork	1 tablespoonful vinegar
½ sliced onion	Lard
	1½ tablespoonfuls toyo sauce

Fry the tokua until somewhat brown and set aside. Fry the onion with the pork, then add the vinegar and toyo sauce. Cook 2 minutes without stirring. Add the water and boil until

the meat softens. Add the fried tokua and continue boiling until a very small amount of the soup remains in the pan.

SOY BEANS WITH COCONUT MILK

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| 1 cupful boiled soy beans | 1 small piece of ginger, pounded |
| 2 cupfuls coconut milk | Salt to taste |
| 3 sections garlic, pounded | |

Boil the coconut milk with the garlic, ginger, and salt, in a covered pan for 10 minutes. Add the soy beans and cook until the soup has been reduced to 1/5 its volume. Remove the garlic and ginger before serving.

SOY BEANS WITH SOTANGJON

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| 1 cupful boiled soy beans | 2 tablespoonfuls chopped green onions |
| 1 cupful of sotangjon cut to a length of 1/2 inch and soaked in water 10 minutes | 4 sections garlic, chopped |
| 4 tablespoonfuls sliced pork | 4 tablespoonfuls soy sauce |
| 2 tablespoonfuls sliced shrimps | 1/4 teaspoonful pepper |
| 2 tablespoonfuls chopped onion | 2 cupfuls shrimp soup |
| | 2 tablespoonfuls lard |

Fry the garlic, onion, pork, and shrimps in lard until brown. Add the soy beans, sotangjon, the shrimp soup, soy sauce, and pepper, and boil 10 minutes. Add the green onions, and boil 3 minutes longer.

SOY BEANS WITH BAKALAO

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| 1 cupful boiled soy beans | A few pinches of pepper |
| 1/2 cupful flaked bakalao (salt-codfish) soaked 2 hours in cold water before using | 3 sections garlic |
| 1 medium-sized onion, cut fine, lengthwise into six parts | 2 sweet red peppers cut lengthwise |
| | 4 tablespoonfuls oil |
| | 4 medium-sized ripe tomatoes, chopped in pieces |

Sauté the garlic, onion, and tomatoes in oil. Add the flaked fish, soy beans, pepper, and enough water to cover the mixture. Boil until a small portion of the soup is left. Drop in the sliced sweet pepper and continue cooking 5 minutes.

SOY BEANS WITH CURRY

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| 3/4 cupful boiled soy beans | 1/4 onion, sliced into long thin wise |
| 3/4 cupful sliced squash | |
| 1/4 teaspoonful curry powder | 1 tablespoonful lard |
| 1/2 cupful coconut milk | 3/4 teaspoonful salt |

Fry the onion in lard. Add the squash and the soy beans, and cook 10 minutes. Then add the coconut milk, the curry

powder dissolved in a small quantity of water and salt, and boil 3 minutes.

SOY BEANS WITH ORANGE SAUCE

½ cupful boiled soy beans	1 teaspoonful butter
¼ cupful orange juice	½ teaspoonful salt
¼ teaspoonful grated orange rind	2 pinches of pepper
1 teaspoonful flour	

Melt the butter and add flour, stirring constantly. Add salt, orange rind, and pepper. Then add the orange juice and cook until somewhat thick. Add the soy beans, and continue cooking for 2 minutes.

SOY BEANS WITH TOMATO SAUCE

½ cupful boiled soy beans	½ teaspoonful salt
1 small onion, minced	A few pinches of pepper
2 sections garlic, chopped fine	2 tablespoonfuls lard
⅓ cupful catchup	

Sauté the garlic, onion, and soy beans in lard and add to it the tomato catchup, salt, and pepper. Cook, stirring constantly, for 5 minutes.

TOKUA WITH EGG SAUCE

1 cake tokua	1 large tomato
1 medium-sized onion, sliced into thin narrow pieces	1 egg
½ teaspoonful salt	¾ cupful water
2 sections garlic, chopped fine	
2 tablespoonfuls lard	

Slice the tokua cake into thin slices, 1 inch long, and ½ inch wide. Fry in hot fat until brown.

Sauté the garlic, onion, and tomato in lard and add the salt and the fried tokua. Continue frying, stirring constantly, for 2 minutes. Finally add the water and let the mixture boil 2 minutes. While boiling, gradually add the well-beaten egg, stirring the soup while adding. Boil the whole mixture not more than 2 minutes.

SOY-BEAN BALLS WITH WHITE SAUCE

1 cupful boiled soy beans	1 tablespoonful butter
4 tablespoonfuls bread crumbs	½ small onion, chopped fine
1 egg	Salt and pepper to taste

Chop the soy beans and onion together. Add the melted butter, lightly beaten egg, salt, and pepper. Mix thoroughly.

Shape into small balls, roll in bread crumbs, and fry in deep fat. Serve with white sauce made as follows:

WHITE SAUCE

Brown 1 tablespoonful of flour with $\frac{1}{4}$ teaspoonful salt and a few pinches of pepper in 2 tablespoonfuls butter. Add 1 cupful of soy-bean milk and cook until thick, stirring constantly to prevent lumping and burning.

SOY-BEAN BALLS

$\frac{1}{2}$ cupful boiled soy beans	2	tablespoonfuls lard
1 egg	1	teaspoonful salt
1 tablespoonful flour	4	pinches pepper
$\frac{1}{2}$ onion, chopped into fine pieces	1	cupful water
2 sections garlic, chopped fine	1	tablespoonful vinegar

Fry the soy beans and the chopped onion in 1 tablespoonful lard. Season with $\frac{1}{2}$ teaspoonful salt and a pinch of pepper. Remove from the pan and cool. Beat an egg and thicken it with the flour. Mix it into the soy-bean mixture and form into little balls.

Sauté the finely chopped garlic in 1 tablespoonful lard. Add 1 cupful of water, 1 tablespoonful vinegar, $\frac{1}{2}$ teaspoonful salt, and 3 pinches of pepper, and boil without stirring for 3 minutes. Drop the balls in the boiling solution and cook about 5 minutes.

SOY-BEAN BALLS

$\frac{1}{2}$ cupful boiled soy beans	1	teaspoonful chopped green
2 tablespoonfuls chopped pork		onion
1 egg	1	tablespoonful sugar
2 tablespoonfuls flour	1	teaspoonful salt
		3 pinches ground pepper

Mix the above ingredients, form into small balls, and fry in deep fat until brown.

This may be served with catchup or with tomato sauce.

TOKUA CROQUETTES

1 cake tokua, mashed	3	tomatoes, chopped fine
1 medium-sized potato, boiled and mashed	3	sections garlic, chopped
1 small fish, fried and flaked	2	eggs
1 small onion, sliced fine	3	tablespoonfuls bread crumbs
	$\frac{1}{2}$	teaspoonful salt

Sauté the garlic, onion, and tomatoes in 1 tablespoonful lard. Add the flaked fish and salt, and fry the mixture 2 minutes. Fry the mashed tokua in a small amount of lard and mix it with the mashed potato. Make oval croquettes of the above mixture, the tokua and potato, and roll the croquettes in lightly beaten eggs, then in bread crumbs. Fry in hot lard until brown.

SOY-BEAN TOKUA PIE

½ cupful boiled soy beans	1 tablespoonful seedless raisins
1 cake tokua, chopped fine	2 sections garlic, chopped fine
2 tablespoonfuls chopped pork	½ cupful shrimp broth
1 tablespoonful chopped shrimp	½ cupful shrimp soup
½ onion, chopped fine	teaspoonful salt
1 medium-sized tomato, chopped fine	A few pinches of pepper

Sauté the garlic, onion, and tomato in lard until brown. Add the pork, shrimp, soy beans, salt, and tokua and fry 5 minutes longer. Then add the pepper, seedless raisins, and shrimp broth, and cook 2 minutes. Use this mixture as filler.

Make the following crust:

1 cupful flour	¼ teaspoonful salt
5 tablespoonfuls butter	1 teaspoonful sugar

Sift the flour, sugar, and salt, and with the aid of a fork mix in the butter until the mixture becomes mealy. Gradually add cold water until the dough clings together. Divide into 2 parts. Roll one part to 1/12 inch thickness and place in a buttered pan. Bake in a hot oven about 7 minutes. Cool and spread the above filler. Roll the remaining dough to 1/12 inch thickness and use this as the top crust. Bake in a hot oven 20 minutes, keeping the bottom heat very low.

SOY-BEAN FRITTERS

1 cupful boiled soy beans	1 teaspoonful baking powder
¼ cupful soy-bean milk	2 tablespoonfuls butter
½ cupful flour	2 eggs
¼ cupful tikitiki flour	½ teaspoonful salt
6 tablespoonfuls sugar	

Cream the butter and sugar. Add the beaten eggs, salt, soy-bean, milk and boiled soy beans. Mix thoroughly. Add the flour, tikitiki flour, salt, and baking powder sifted together,

and stir thoroughly. Drop by spoonfuls in deep, hot lard and fry until brown.

BAKED SOY BEANS

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| 2 cupfuls boiled soy beans | 1 teaspoonful salt |
| 3 thin slices of bacon | $\frac{1}{4}$ teaspoonful ground pepper |
| 2 heaping tablespoonful brown sugar | A few dash of paprika |
| | 1 tablespoonful butter |
| | $\frac{2}{3}$ cupful catchup |

Mix the above ingredients and bake in a moderate oven 30 minutes.

SOY BEANS AND MACARONI WITH CHEESE

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| 1 cupful boiled soy beans | $\frac{1}{8}$ teaspoonful pepper |
| 1 cupful boiled macaroni | $\frac{1}{2}$ teaspoonful salt |
| $\frac{1}{4}$ cupful grated cheese | $\frac{1}{2}$ cupful catchup |

Mix the macaroni, soy beans, catchup, pepper, and salt and a part of the cheese. Place in a baking dish and put the rest of the cheese on top of the mixture.

Bake 30 minutes in a moderate oven.

SOY BEANS AND MACARONI WITH TOMATO SAUCE

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| 1 cupful boiled soy beans | 1 tablespoonful butter |
| 1 cupful boiled macaroni | 1 teaspoonful salt |
| $\frac{1}{2}$ cupful tomato catchup or 1 cupful canned tomato | $\frac{1}{4}$ teaspoonful pepper |
| | 1 section garlic, chopped |
| | $\frac{1}{2}$ onion, chopped |

Sauté the garlic, onion, and tomato in lard. Add the salt and pepper.

Place the soy beans and macaroni in alternate layers, in a baking dish, spread on butter, and pour tomato sauce over all. Bake 30 minutes.

SOY-BEAN AND TOKUA PANSIT

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| $\frac{1}{4}$ cupful soy beans | 3 sections garlic, sliced very thin |
| $\frac{1}{2}$ cupful finely sliced tokua | 2 cupfuls mique |
| $\frac{1}{2}$ cupful sliced pork | $\frac{1}{2}$ cupful stock (made from pork and shrimp) |
| 4 tablespoonfuls sliced shrimp | 2 tablespoonfuls toyo |
| $\frac{1}{2}$ sliced onion | 1 egg, hard boiled |
| 4 tablespoonfuls lard | Salt to taste |
| 6 tablespoonfuls green onion | |

Fry the mique in a small amount of lard; add 1 tablespoonful toyo sauce and set aside. Fry the sliced pork and the tokua separately. Saute' the garlic and onion; add the shrimp,

pork, soy beans, tokua, 1 tablespoonful of toyo, and the stock, and cook until practically dry. Add the mique and a few pinches of salt, if necessary, and place the mixture on a plate. Garnish by sprinkling over it the green onion leaves, cut fine, and the slices of hard-boiled egg.

SOY-BEAN LUMPIA

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| 1 cupful boiled soy beans | 1 chopped onion |
| ½ cupful sliced boiled pork | 1 cupful shrimp broth |
| ½ cupful shrimp, sliced thin,
crosswise | 2 sections garlic, chopped |
| ½ cupful sliced tokua | 2 tablespoonfuls lard |
| | 2 tablespoonfuls toyo |
| | ½ cupful sliced cabbage |

Sauté the garlic, onion, and shrimp in lard. Add the pork, soy beans, tokua, and toyo, and fry 3 minutes longer. Then add 1 cup of shrimp broth (made by pounding the heads of shrimps and boiling them in water), and boil until practically dry. Add the cabbage and boil 3 minutes longer.

Remove from the fire and wrap about 2 tablespoonfuls of the mixture in each lumpia wrapping.

Serve with pounded garlic and lumpia sauce made as follows:

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| 8 tablespoonfuls water | 4 tablespoonfuls flour |
| 1 tablespoonful brown sugar | 1 teaspoonful toyo |

Make a smooth paste from the above by mixing all ingredients thoroughly and boiling the mixture, stirring constantly until thick.

FRIED SOY-BEAN LUMPIA

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| 1 cupful boiled soy beans | 2 hard-boiled eggs |
| 4 tablespoonfuls pork, sliced fine | 1 cupful cubed tokua |
| 1 small onion, sliced fine | ½ teaspoonful salt |
| 4 sections chopped garlic | Lumpia wrappers |

Wash and cut the tokua in small cubes. Sauté the garlic and onion; add the pork, soy beans, tokua, and salt, and cook 5 minutes. Lay aside. Slice fine the hard-boiled eggs and add them to the fried mixture. Wrap about 2 tablespoonfuls of the mixture in each lumpia wrapper, crossing the ends. Fry in deep hot lard until brown and crisp, and serve hot with vinegar-garlic sauce made by pounding garlic, adding this to the vinegar, with salt and pepper.

SOY-BEAN CHOP SUEY

1 cupful boiled soy beans	$\frac{3}{4}$ teaspoonful white wine
$\frac{1}{2}$ cupful beef, sliced in small pieces	2 tablespoonfuls oil or lard
2 tablespoonfuls native celery (kinchay), cut in small pieces	A few small slices of ginger
	A piece of cabbage, cut in small pieces
	$\frac{1}{2}$ teaspoonful cornstarch

Sauté the cabbage, soy beans, and kinchay in the oil, for 3 minutes. Add enough water to cover. Drop the pieces of ginger, the pieces of beef previously rolled in the mixture, of cornstarch, a few drops of oil, and wine, and cook the mixture until about dry.

Make the following gravy:

Dissolve 1 tablespoonful of cornstarch in 1 cupful of beef stock and boil the solution until thick. Season with 1 teaspoonful of sugar and $\frac{1}{4}$ teaspoonful salt.

Mix the gravy with the soy-bean mixture before serving.

TOKUA CHOP SUEY

$1\frac{1}{2}$ cupfuls sliced tokua (bean curd)	$\frac{1}{2}$ cupful sliced onion
$\frac{1}{4}$ cupful sliced pork	2 tablespoonfuls toyo (soy sauce)
	Shrimp stock

Sauté the onion, pork, and tokua for 10 minutes, stirring constantly. Add the soy sauce and enough shrimp stock, made from shrimp heads and shells, to cover the mixture. Boil 15 minutes.

Put in a deep dish and pour over it the gravy made as follows:

Dissolve 1 teaspoonful of cornstarch in 1 cupful of shrimp stock and bring to a boil. Add 1 teaspoonful of sugar, $\frac{1}{4}$ teaspoonful of salt, and $\frac{1}{4}$ teaspoonful of oil and cook the gravy until it thickens.

TOKUA-SOY-BEAN PANARA

$\frac{1}{2}$ cupful boiled soy beans	1 small package seedless raisins
$\frac{1}{2}$ cupful finely sliced tokua	2 tablespoonfuls toyo sauce
$\frac{1}{2}$ cupful boiled soy-bean sprouts	$\frac{1}{8}$ teaspoonful pepper
$\frac{1}{2}$ cupful shedded sweet potato	$\frac{1}{2}$ onion, chopped fine
4 tablespoonfuls ground pork	2 large tomatoes, chopped
4 tablespoonfuls chopped shrimp	2 sections garlic, chopped fine
	3 tablespoonfuls lard

Sauté the garlic, onion, and tomatoes in lard. Add the pork, shrimps, soy-bean sprouts, shredded sweet potato, toyo sauce, pepper, and cook 3 minutes. Then add the tokua, soy beans, and raisins, and continue cooking, stirring constantly 5 minutes more.

Use the above as filler.

Make the following dough:

1 cupful flour	$\frac{1}{2}$ teaspoonful sugar
$\frac{1}{8}$ teaspoonful salt	2 egg yolks
$\frac{1}{4}$ cupful water	

Sift the flour with salt and sugar, and add the egg yolks. Knead thoroughly. Then add the water to the dough and continue kneading until the dough is very fine and smooth.

Roll to a very thin sheet and cut to about 2 inches square. Place about 1 tablespoonful of the above mixture at the center of each square and fold the thin sheet of dough, bringing the sides together. Cut the edges to give the shape of a half circle. Seal the open sides by pressing them with the tip of a fork, and fry in deep, hot fat until crisp.

SOY-BEAN OKOY

$\frac{1}{4}$ cupful boiled soy-bean sprouts	2 tablespoonfuls green onion
$\frac{1}{2}$ cupful tikitiki flour	leaves, cut fine
$\frac{1}{2}$ cupful cornstarch	$\frac{1}{4}$ cupful sliced shrimp
$1\frac{1}{2}$ cupfuls shrimp soup	6 sections garlic, sliced very thin
1 egg	Salt to taste

Mix the tikitiki flour and cornstarch, and suspend in the shrimp soup. Mix the egg and stir well. Add the onion leaves, soy-bean sprouts, salt to taste, and fry in deep, hot fat. When half cooked place a few slices each of garlic and shrimp on each portion and continue frying until brown.

SOY-BEAN KEKIAM

1 cupful chopped tokua	$\frac{1}{4}$ cupful ground pork
2 tablespoonfuls ground shrimp	2 eggs
1 teaspoonful green onion leaves	$\frac{1}{4}$ cupful flour
chopped fine	$1\frac{1}{2}$ tablespoonfuls toyo sauce

Mix the above ingredients and wrap in a piece of omentum to form a cylinder about 1 inch in diameter. Steam for 30 minutes. Cool and slice, thin, crosswise. Fry in hot fat until brown. Serve with vinegar to which has been added chopped onion, salt, pepper, and a little sugar to taste.

SOY-BEAN SALAD WITH LETTUCE LEAVES

1 cupful boiled soy beans	1 tablespoonful oil
½ cupful shredded lettuce	1 teaspoonful salt
2 hard-boiled eggs	1½ tablespoonfuls vinegar

A few pinches of ground pepper

Mix the oil, vinegar, salt, and pepper, and add this to the soy beans and lettuce previously mixed. Mound the mixture in a plate and sprinkle over it the yolks of hard-boiled eggs passed through a coarse sieve. Slice the hard-boiled whites into small pieces and scatter on the mound of salad.

SOY-BEAN SALAD

1 cupful boiled soy beans	1 tablespoonful oil
1¼ tablespoonfuls calamansi- juice	½ onion, chopped fine
	¾ teaspoonful salt

A few pinches of pepper

Gradually add the oil to the calamansi juice, stirring constantly. Add the salt and pepper.

Mix the soy beans and onion and pour the dressing over the mixture.

SOY-BEAN SALAD

½ cupful boiled soy beans	1 potato, boiled and cut into small cubes
½ cupful sliced string beans, boiled until tender	1 tablespoonful green onion leaves, cut fine
1 tablespoonful sliced shrimp	¾ cupful mayonnaise
1 tablespoonful sliced sugar beets, blanched and cut into small cubes	¾ teaspoonful salt
	A few pinches of pepper

Mix the above ingredients thoroughly, and serve on lettuce leaves previously washed and blanched.

SOY-BEAN BISCUITS

⅓ cupful soy-bean flour	2 tablespoonfuls butter or Crisco
⅓ cupful wheat flour	2 teaspoonfuls baking powder
1 egg yolk	½ tablespoonful sugar
⅓ cupful milk	¼ teaspoonful salt

Sift the flours, baking powder, salt, and sugar, 3 times. Knead the mixture with the butter.

Beat the egg yolk and add the milk. Add them to the flour mixture, mixing with a spoon to a soft dough. Toss on a floured board and roll lightly to ½ inch thickness. Cut with

a biscuit cutter and bake in a hot oven, 450° F. from 10 to 12 minutes.

Cookies No. I

PLAIN SOY-BEAN COOKIES

¼ cupful soy-bean flour	1 egg
½ cupful wheat flour	½ cupful butter or lard
⅓ cupful sugar	½ teaspoonful vanilla

Cream the butter and sugar and gradually add the well-beaten egg; then the flour and vanilla. Drop small portions from the tip of a teaspoon onto a buttered sheet and spread thick with a knife. Bake in a hot oven until brown.

Cookies No. II

SOY-BEAN COOKIES WITH PILI NUTS

Follow recipe for Cookies No. I, adding to the batter 3 tablespoonfuls of chopped pili nuts.

Cookies No. III

SOY-BEAN COOKIES WITH CANDIED ORANGE PEEL

Follow recipe for Cookies No. 1, adding to the butter 3 tablespoonfuls of chopped candied orange peel.

Cookies No. IV

SOY-BEAN COOKIES WITH RAISINS

Follow recipe for Cookies No. I, spreading 2 or 3 seedless raisins on top of each cooky before baking.

SOY-BEAN-ROSELLE ROLL

½ cupful soy-bean flour	¾ cupful sugar
1 cupful wheat flour	5 tablespoonfuls milk
1½ teaspoonfuls baking powder	½ teaspoonful lemon or lime rine, grated
¼ teaspoonful salt	Roselle jelly
3 eggs	

Sift the soy-bean flour, wheat flour, baking powder, and salt together 3 times.

Beat the egg yolks until light. Add the sugar gradually. Beat while adding. Then add the flour alternately with the milk, and finally the flavoring.

Fold in the whites of eggs beaten to stiffness, and pour the entire mixture into a low baking dish not more than ¼

inch thick. Bake from 6 to 10 minutes in a moderate oven, 325 to 340° F.

Invert the pan on a paper sprinkled with powdered sugar. Cut the sides of the cake, or the hard portions. Spread over it the roselle jam, and roll. After the cake has been rolled, roll a piece of paper around it to keep the cake in shape.

Cut crosswise before serving.

SOY-BEAN ANGEL CAKE

¼ cupful soy-bean flour	½ cupful sugar
½ cupful wheat flour	⅛ teaspoonful salt
Whites of 5 eggs	⅓ teaspoonful vanilla extract
½ teaspoonful cream of tartar	

Beat the egg whites, add the cream of tartar, and beat hard until the mixture is stiff, but not dry. Add the sugar gradually, mixing it thoroughly with the whites.

Sift the two kinds of flour with the salt three times, and fold it in the whites. Add the vanilla extract and transfer to an unbuttered angel-cake pan and bake from 50 to 65 minutes in a low oven, from 275 to 300° F.

Do not disturb while baking.

Remove from pan while hot.

SOY-BEAN LAYER CAKE

¼ cupful soy-bean flour	6 eggs
⅓ cupful wheat flour	1½ teaspoonfuls lime juice
1 teaspoonful baking powder	3 tablespoonfuls water
3 tablespoonfuls cornstarch	1 cupful sugar
¼ teaspoonful salt	1 teaspoonful lime rind, grated

Mix the soy-bean flour, wheat flour, baking powder, salt and cornstarch and sift three times.

Beat the egg whites until stiff.

Beat the egg yolks until thick. Gradually add the sugar and continue beating. Then add the lime juice, water, and the lime rind, and lastly the flour mixture, beating very lightly. Fold in the egg whites and transfer to well-buttered pans about ½ inch thick. Bake in an oven 350° F., for 20 minutes.

Invert the pan while hot and place the layers on a wire basket to cool.

Fill between the layers with soy-bean cream, made as follows:

½ cupful soy-bean milk	¼ cupful water
½ cupful sugar	2 eggs yolks

Boil the sugar and water to a medium thick syrup. Add the egg yolks beaten well with the milk, and cook to a thick consistency. Flavor with ½ teaspoonful vanilla.

This cream may be used as the frosting for the cake.

SOY-BEAN PUDDING

2 tablespoonfuls roasted soy beans	4 tablespoonfuls milk or coconut milk
2 tablespoonfuls rice	
1 cupful soy-bean milk	4 tablespoonfuls sugar or more if desired.
½ cupful water	
2 egg yolks	

Boil the rice and soy beans in the mixture of soy-bean milk and water, until the rice is soft. Add the sugar and continue boiling until the mixture is thick. Stir the egg yolk into the milk (coconut or canned) and add this to the boiled rice and soy beans. Mix thoroughly and transfer to a mold. Cook in a pan of boiling water for ½ hour.

Serve with medium thick syrup.

SAGO PUDDING WITH SOY-BEAN MILK

1 cupful soy-bean milk	2 tablespoonfuls sugar
1 tablespoonful sago	A pinch, each, of nutmeg and salt
1 egg	

Boil the milk; add the sago, let it simmer gently, stirring constantly, until it becomes clear. Add the sugar and salt. Take the pan off the fire and let the mixture cool a few minutes. To the warm sago-milk, mixture add the well-beaten egg and the nutmeg. Transfer to a buttered pan and bake in a moderate oven for 30 minutes.

SOY-BEAN PUDDING WITH SHREDDED COCONUT AND RAISINS

1 cupful soy-bean milk	¾ cupful sugar
½ cupful mashed soy beans	2 eggs
¼ cupful shredded coconut	1 tablespoonful seedless raisins

Beat the eggs lightly.

Mix all the ingredients together and stir in the beaten eggs. Pour into a buttered pan and cook in boiling water until

thick. Transfer to a moderate oven and bake to brown the top.

SOFT CUSTARD WITH SOY-BEAN MILK

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| 1 cupful scalded soy-bean milk | ¼ teaspoonful salt |
| 2 eggs | A pinch grated lemon peel |
| 5 tablespoonfuls sugar | |

Beat the eggs slightly; beat in the sugar and the salt. Add the hot milk slowly, stirring constantly, and then add the flavoring. Line the mold with very thick carmelized syrup; pour the egg-milk mixture into the mold, and cover with the lid. Cook in a pan of boiling water for 30 minutes, at the end of which time, transfer it to an oven to brown the top.

SOY-BEAN-ORANGE CUSTARD

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| 1 cupful soy-bean milk | 1½ tablespoonfuls flour |
| 2 eggs | 5 tablespoonfuls orange juice |
| 5 tablespoonfuls sugar | |

Beat the eggs, add the soy-bean milk, sugar, and orange juice, and mix thoroughly. Dissolve the flour in a small amount of water and add this to the milk mixture. Strain through a cloth and heat to the boiling point.

Line a mold with very thick carmelized syrup and pour in the milk mixture. Cook in a pan of boiling water until the milk solidifies. Place in a moderate oven to brown the top.

SOY-BEAN ISLAND

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| ½ cupful soy-bean milk | 3 eggs |
| ½ cupful and 4 tablespoonfuls sugar | ½ cupful water |
| A few drops of lemon extract | |

Separate the yolks and whites of the eggs. Beat the whites until stiff, add 4 tablespoonfuls sugar, and beat again until stiff. Boil the water and ½ cupful sugar and while boiling drop in the stiffly beaten egg whites by spoonfuls; turning each over after one minute of boiling.

Make the cream by adding soy-bean milk to the remaining syrup in which the egg white was cooked. Boil until thick. Add the slightly beaten egg yolks and cook until thick.

Pour the cream into a plate and place the whites, cooked in syrup, on it. Put about ¼ teaspoonful of the yolk-milk

mixture on each mound of white, then top with a small amount of roselle jelly.

SOME COMMON FOODS MADE FROM SOY BEANS AND METHODS OF PREPARING THEM

I. SOY-BEAN MILK

Soy-bean milk was first extracted by Whai Nain Tze, a Chinese philosopher, long before the Christian Era. It is known to the Chinese as "fu chiang," or bean-curd sauce, and to the Japanese as "toniu," or milk from beans.

It is a white or creamy emulsion, of the consistency of milk, and has a characteristic odor and flavor, which may be masked by the addition of a small amount of vanilla extract or others flavoring extracts. It resembles animal milk in that the fat globules rise to the top on standing, it sours if left in a warm place; it is coagulated by certain mineral salts, rennet, pepsin, or acid; it can be condensed by evaporation; it can be fermented and used as buttermilk; and it may be used as milk in such preparations as cakes, cookies, chocolate, bread, custard, soups, biscuits, candies, etc.

In China and Japan, many factories are dedicated to the manufacture of soy-bean milk. The Chinese and Japanese people use it for drinking purposes and for infant feeding. A small quantity of sugar is added to the milk when it is used as a beverage. It is said to rank close to mother's milk in infant feeding.

Doctor Tso, after conducting his experiments on rats, found that soy-bean milk compares with cow's milk in vitamin A content, and is richer in vitamin B. The experiment of Hill and Stuart of Harvard Medical School in feeding 40 babies with soy-bean milk indicated that the babies thrived. They took it well, digested it, and gained on it. Since soy-bean milk is inferior to cow's milk in mineral content, the addition of 2 grams of calcium carbonate and 1 gram of sodium chloride (table salt) to every 100 grams of soy beans used for making milk will be needed if the child is to be entirely dependent on this milk for its food supply.

In addition to its value as food for both young and old, it also serves to check the summer diarrhea common to children. Sinclair (1916) in his experiments on babies who had diarr-

hea and intestinal disturbances, found soy-bean milk to be very useful in curing the majority of cases.

METHOD OF PREPARATION

The method generally employed in the preparation of soy-bean milk is to wash the beans thoroughly and to soak them in plenty of cold water for 12 hours, changing the water frequently. Then the beans are ground in a stone mill, adding small amount of water while grinding. (The total amount of water added is from three to five times that of the beans). The thin pastelike fluid is boiled about one hour and strained through a piece of cheesecloth to remove the impurities and the coarse particles. The filtrate, or the liquid passing through the cloth, is the soy-bean milk and the filter, or the solid collected in the cloth, is used as animal food. Block (1907) and Li Yu Ying (1911-12)⁴ claim that this filter does not ever have traces of starch. Its composition, according to Block (1907), is 88.75 per cent water, .248 per cent nitrogen, .36 per cent ash, 0.04 per cent fat; and 10.85 per cent other substances.

The cake left after pressing the oil from the whole bean is also used for making soy-bean milk. To the meal or cake water is added (five times the bulk of the meal). The mixture is boiled and strained through a piece of cheesecloth.

Aro Itano⁴ claims that the following methods of making soy-bean milk from soy-bean meal is better than the former: To the bean meal is added five times its bulk of water; it is then inoculated with *B. coli* and *B. lactis aerogenes* and left to stand 16 hours at room temperature. At the end of this time it is boiled one hour; filtered through a fine cheesecloth and to it is added salt in the proportion of one-half teaspoonful to one quart of the milk. Five per cent milk sugar is added if desired.

II. CONDENSED SOY-BEAN MILK

Condensed soy-bean milk may be prepared by adding 4 grams of dipotassium phosphate and 600 grams of sugar to 4 liters of soy-bean milk. It is then concentrated to a thick liquid in a vacuum.

⁴ Bull. Mass. Agr. Exp. Sta. No. 182 (1918) 4.

The condensed soy-bean milk may be used as condensed animal milk in the preparation of chocolate, for sweetening coffee and tea, and for culinary purposes.

III. SOY-BEAN MILK POWDER

The soy-bean milk powder is very rich in fat and protein. According to Li Yu Ying and Grandvoinet (1911-12) its composition is water, 7 per cent; protein, 46.04 per cent; fat, 27.60 per cent; carbohydrates, 12.36 per cent; and mineral salts, 6 per cent.

The method employed in preparing powdered cow's milk is employed in the manufacture of powdered soy-bean milk. The original method of manufacturing powdered milk was to pour small streams of the milk on the surface of hollow steel rollers revolving in opposite directions and against each other. The rollers are heated inside by live steam. They are so adjusted as to allow a thin film of milk to pass between them. The stream of milk instantly dries upon touching the hot rollers and the thin film of dry milk coating them is scraped off by sharp knives fixed to the upper size of the rollers. Some manufacturers evaporate the milk to a thicker consistency before passing it through the rollers.

The modern method of manufacturing powdered milk is by spraying or atomizing the liquid milk into dry air in the largest possible evaporating space, causing the moisture to separate from the milk and leave a dry powder. The milk is first condensed in a vacuum pan, then passed to sanitary tanks to which are attached sanitary pipes leading to the spray box. Through the "dry box," filtered, heated, dry air is circulated continuously and into this circulation of air the milk is atomized. Machines, consisting of a boiler to produce the steam for the coils to heat the air, filters for air filtration, and for circulating the air, are used in the manufacture of powdered milk. The moisture is taken up by the heated air and the atomized milk dries instantly in the form of flour or pulverized sugar and by gravity falls to the bottom of the drying box. The powdered milk is collected and packed in cans.

IV. SOY-BEAN CASEIN

Soy-bean casein is commercially manufactured in Cochin, China. The meal remaining after pressing the oil from the

bean is ground through a stone grinder, water being added while the grinding takes place. Then the milky liquid is passed through a filter press. The residue is again ground with water. The milky fluid is heated in wooden vats, to the boiling point, and to it calcium sulphate is added in the proportion of 1 kilogram to 1,000 liters of milky fluid. The calcium sulphate precipitates the casein. This is collected by filtration through a fine cloth filter. It is purified by dissolving it in a very weak solution of sodium hydroxide and filtering. The casein is reprecipitated by the addition of acetic acid. The precipitate is collected by filtration and dried at a low temperature.

The soy casein may be used as a substitute for animal casein, such as in the preparation of breads, sauces, concentrated biscuits, etc. It is also used as a medium for paints and water proofing for textiles, size for paper, dressing for textiles, etc.

V. SOY-BEAN CURD.

The soy-bean curd is known to the Chinese as "teou fu," to the Japanese as "tofu," to the Annamites as "dan phu," and to the Filipinos as "tokua," or "toqua."

The soy-bean curd was first produced by Whai Nain Tze, before the Christian Era and was introduced into Japan from China by the Buddhists. It was introduced into the Philippines by the Chinese and has become a very popular food in Manila and in places where there are Chinese who manufacture it for sale. "Tokua" on account of its high fat, protein, and mineral salts content, is called by the Chinese as "meat without bone," or "the poor man's meat."

Table 3 and 4 will give the reader an idea of the value of "tokua" as human food.

The ash of the soy-bean curd, according to an analysis based on a moisture-free sample performed by W. H. Adolp and C.M. Wu,⁵ contains 1.9 per cent of calcium oxide; 26 per cent of magnesium oxide, 0.3 per cent of potassium oxide, 0.03 per cent of sodium oxide, 2.28 per cent of phosphorus pentoxide, 0.01 per cent chlorine, 1.34 per cent of sulphur, and 0.01 per cent of iron. The coagulating medium used in the preparation of the curd analyzed was gypsum. The use of

⁵ Natr. Med. Journ. of China, 6 (1920) 233.

mother liquid of sea salt as coagulating agent would invariably increase the chlorine and sodium content.

The first step in the manufacture of soy-bean curd is to make the milk from the bean. (The method has already been described). Then the proteins are precipitated by the addition of a small quantity of mother liquid of sea salt, magnesium and calcium chloride solution, saturated solution of alum, or vinegar. Block (1906) has proven that chlorides and nitrates of calcium, barium, magnesium, and magnesium sulphate coagulate the soy-bean milk. Li Yu Ying and Grandvoinet (1911-1912) coagulated the milk with rennet, while Piper and Morse (1923) coagulated it with 1 per cent solution of acetic, tartaric, and lactic acids. Sour milk and the water drawn from the bean curd after coagulation may also be used as coagulants.

When complete coagulation has taken place, the water is thrown away and the white mass, while hot, is placed in square wooden trays, about 3 inches deep, and covered by a thin piece of cloth. The ends of the cloth are folded over and a flat-weighted lid is placed on top to press out the excess water. Then the solid cake is cut into small squares and sold as soy-bean curd or soy-bean cheese.

We have found the method used by the Chinese in Manila to be simple and satisfactory. First the soaked soy beans are ground through a stone mill, water being added while the grinding takes place. The milk is diluted with hot water until the total amount of water used is three times the volume of the soy beans. It is then boiled for about an hour. The boiled milk is strained through a piece of fine cheesecloth. The solid portion collected in the cloth is dumped in a wooden barrel. This is sold as hog feed. The liquid milky substance collected in another wooden barrel is added a small quantity of burnt gypsum* (about 1.5 per cent by weight) suspended in hot water, and the mixture allowed to stand about thirty minutes. At the end of that time the milk has coagulated to a solid but soft mass about the consistency of a soft jelly. This is transferred to a shallow, wide basket lined with fine cheesecloth which allows the water to pass through. The white solid is then placed on a low table around which are seated on low benches. Chinese laborers who wrap about three-fourths cupful of the soft mass, or bean curd, in a square piece of fine cheesecloth, about the size of a small handkerchief. After several minutes

* Food grade Calcium Sulfate is now recommended. Alternatively some use agar or carageenan to set the curd.

standing the packages are unwrapped and rewrapped tighter in the same cloth. Then they are subjected to a very light pressure for a few minutes to get rid of the excess moisture. The bean curd or cheese is unwrapped, spread on shallow bamboo trays ("bilao") and partially dried at room temperature. Then they are dipped in a weak solution of turmeric to coat the outside with a light yellow coloring.

Some manufacturers soak the small cakes of curd in brine solution for a short time, then dip them in a solution of burnt sugar or molasses and bake them slightly before putting them on the market.

The amount of yield in the manufacture of soy-bean curd of "tokua" differs according to the amount of water used during the grinding and to the variety of bean used. In the commercial manufacture of "tokua", the general yield is about three and one-half times as much bean curd, by weight, as the original beans, or 50 grams of beans will yield about 175 grams of bean curd. Champion (1885) produced 185 grams of curd from 120 grams of beans; Paillieux (1880) produced one and one-half kilos of curd from one kilo of the beans. Morse⁶ conducted a series of experiments on the yield of soy beans and found that the straw-yellow variety had the highest yield, or 34.3 grams of curd from 50 grams of beans and the black variety gave the lowest yield, or 14.1 grams of curd from 50 grams of beans. The low yield obtained by Morse as compared with the commercially produced curd is due to the fact that he pressed the moisture out more thoroughly from the curd than those sold commercially. The bean curd obtained by Morse when analyzed showed a content of from 31.94 per cent to 44.7 per cent protein, and from 13.55 per cent to 20.33 per cent fat.

On account of its high fat, protein, and mineral content; its high digestibility; its easy preparation; and its low market price, in comparison with meat or eggs, the soy-bean curd becomes a very desirable food in the Tropics. Oshima (1905) found in his digestion experiments that 95 per cent of the protein, and about 95 per cent of the fat are digested. About 99 per cent of the total carbohydrates is digested if eaten with rice. If eaten alone the "tokua" was found to be less digestible.

⁶ Piper and Morse, *The Soybean* Vol. I, 236.

Some common preparations made from soy-bean curd are "tahuri," frozen tofu, bean-curd brains, dry bean curd, thousand fold, fragrant dry bean curd, and fried tofu.

v-A. "TAHURI" or "TAHULI"

"Tahuri" is manufactured in China and exported to the Philippines in large stone jars or in small tin cans. There are some "tokua" manufacturers in Manila that manufacture "tahuri" for local consumption.

Those that are imported from China are preserved in strong brine solution and the cakes are broken during the shipment so the liquid becomes like a thick emulsion containing pieces of the cured curd.

In Manila, the Chinese method of manufacture is to pack the large pieces of soy-bean curd, about 5 inches long, 4 inches wide, and 2.5 inches thick, with much crude salt, in empty gasoline cans. The curd is allowed to cure for a period of several months. During the curing period the beancurd changes from white to a brownish yellow color and develops a peculiar salty flavor to which the Chinese and many Filipinos are educated.

The composition of "tahuri" is shown in Table 5.⁷

Table 5. — COMPOSITION OF TAHURI

Tahuri	Water	Protein	Nitrogen	Fat	chloride Sodium	SO ₃
	Per cent	Per cent	Per cent	Per cent	Per cent	Per cent
Solid						
portion ...	55.76	14.56	2.33	7.12	12.7	.08
Liquid	57.86	9.56	1.53	2.09	16.38	.007

v-B. FROZEN TOFU

The frozen tofu is known to the Japanese as "kori tofu." The fresh bean curd does not keep more than two days at room temperature. One way of keeping it is by freezing. The bean curd is cut into small pieces and then frozen hard. The protein shrinks when frozen and a porous cake is formed permeated with ice crystals. The frozen tofu is thawed out and dried in a vacuum. The dried products may be preserved indefinitely and used as fresh bean curd after soaking it in plenty of cold water.

⁷ Piper & Morse, The Soybean, 1st Edition, (1923) 257.

v-C. BEAN-CURD BRAINS OR "TOFU NAO"

The bean curd brains known to many Filipinos as "tojo" is the unpressed soy-bean curd. The method of making "tojo" is almost the same as the method used in making "tokua", only that a smaller amount of the coagulating agent is used, and the very soft but solid mass formed is left undisturbed in the wooden container until used. The Chinese used to peddle this preparation in a wooden pail-shaped container, through different parts of Manila, but on account of the Philippine Health Service regulations, this product is now sold in the markets only.

The "tojo" is served with a few tablespoonfuls of medium thick brown-sugar syrup, which gives it flavor, the "tojo" being almost tasteless. Sometimes it is eaten with sweet oil, sauce, and vinegar, or with finely cut meat and spices.

v-D. BEAN CURD

The fresh bean curd when dipped in burnt millet-sugar sauce and rubbed with fine salt will keep longer than the "tokua" and is called "topu khan." This preparation is usually eaten in soups.

v-E. FRAGRANT DRY BEAN CURD

The fragrant dry bean curd is so named from the fact that it has the consistency of smoked sausage called "hsiang khan" or fragrant dry.

It is made by subjecting the fresh bean curd to great pressure, which eliminates much of the water content. The pieces of semidry curd are soaked in a weak brine solution in which is dissolved burnt millet-sugar and to which is added powdered spices. The curd is then dried to hardness. This preparation keeps indefinitely and is used in soup making and in vegetable dishes.

v-F. THOUSAND FOLDS

Thin layers of fresh bean curd are placed on cheese-cloth, one on top of another, and then subjected to a great pressure. The thin layers of curd are dried partially and are rolled together like jamrolls. Then they are cut into strips and served in soups as noodles. On standing, the thousand folds mold and develop a meatlike flavor. This is fried in sesame oil and served in place of meat.

v-G. FRIED BEAN CURD

One of the commonest foods in China is the fried bean curd. The cake is cut into small squares and fried in deep fat until they will float. These are collected and fastened on a string of bamboo fibers. The fried bean curd is generally eaten with syrup and served between meals. It is said to supply energy to hard-working people.

VI. SOY SAUCE

The soy sauce is called by the Chinese, "ch'au yau," or drawing oil; or "pak yau" or white oil; by the Japanese "shoyu"; and the Filipinos, "toyo."

The soy sauce is a dark brown saltry liquid with a peculiar meat extract flavor. It is very popularly used in China, Japan, India, Java, Philippine Islands, and wherever there are Chinese restaurants. The soy sauce is known to many Americans and Europeans who frequent the chopsuey houses. Chinese records show that the soy sauce has been used in China for over 3,000 years. It is estimated that each Japanese consumes 2.5 ounces of soy sauce per day.

METHOD OF MAKING SOY SAUCE

The general method of making soy sauce used in China, described by Elizabeth H. Groff, is as follows:⁸

About 933 pounds of soy beans are soaked overnight, placed with plenty of water in a boiler and boiled until very soft. They are drained in large bamboo baskets. After draining them well and when the beans are almost cold they are poured on a mixing board and 800 pounds of flour is thoroughly mixed. The bean-flour mixture is then spread on trays to about 1.5 inches thick and the mixture furrowed by hand to the beans get the proper ventilation. The trays containing the soy-bean-flour mixture are placed in the mold room from one to two weeks. In about three days mold begins to grow on the beans. The mold is of yellowish green color and is a species of "Aspergillus." Sometimes an undesirable black mold grows. This should be removed as soon as seen in order to prevent it from spreading. The molded beans from the original 933 pounds of boiled beans and 800 pounds of flour are divided into 18

⁸ Soy Sauce Manufacture in Kwangtung, China, Philip, Journ. Sci. 15 (1919) 307-314.

equal parts and each part is placed in a wide mouthed stone jar and covered with a salt solution made from about 100 liters water and $53\frac{1}{3}$ pounds of salt. The jars are allowed to stand in the yard to sun for a period of from two to six months or longer, the longer the period the better. The jars are covered at night and when it rains to prevent adulteration. During the sunning period the mixture is stirred from time to time. Some of the liquid is lost by evaporation during sunning and this is replaced by salt solution three days before the first drawing off of the soy sauce. About 80 pounds of soy sauce is siphoned in the first drawing. This liquid is allowed to stand to allow the solid particles to settle to the bottom and the clear supernatant liquid is separated by decantation or siphoning. The first drawn soy sauce is called "ten ch'au" meaning first drawing and the material remaining in the jar is called "teng shi", or "first salted". This is used as the base of various other sauces or as the base for the second drawing. The first drawing is placed in clean jars and sunned again from several months to several years depending on the quality of sauce the manufacturer wishes to produce. It is said that 5 years sunning will produce an extra quality sauce.

Generally, second, third, and fourth drawings are made. The second drawing is obtained by adding to the bean, or first salted, about 100 liters of water and 40 pounds of salt and allowing the jar to sun about three months. At the end of this time the second drawing is made, the procedure being the same as the first already described. The third and fourth drawings are made in the same manner as the first and the second drawings. The material remaining in the jar after the fourth drawing is sold as a cheap sauce or used as base for cheap sauces.

The first drawing is boiled at least two hours and bottled. It is sold at the highest price. The second drawing next highest, and so on. Often times the second, third, and fourth drawings are mixed and sold at a much cheaper price than the first drawing. Some manufacturers do not observe the sunning method for the second, third, and fourth drawings. In this case the beans are placed in a pan and boiled for at least three hours. Then they are allowed to cool and treated with salt. Canded molasses is sometimes added as a coloring and sweetening agent.

The following method of making soy sauce is an extract of the method described by Margaret B. Church.⁹

Soak the soy beans in plenty of water for about twenty hours, changing the water frequently to prevent fermentation.

Boil the beans to softness and drain well.

Spread the beans, in about a one foot layer, on a large tray-like platform to cool; turn the beans from time to time to hasten the cooling.

Roast wheat until crisp and crush evenly.

Mix the boiled beans and crushed wheat thoroughly in the proportions of from two parts of wheat to six parts of beans or from three parts of wheat to six parts of beans. The mixing must be done so that each bean may be coated with wheat.

Inoculate with mold (sold commercially in Japan as "tane koji" *Aspergillus flavis* Link or *A. oryzae* (Ahlb.) Cohn) and distribute the mixture in flat trays. Place the trays in the "koji" room, or mold room where the temperature is kept constant at 24° to 25°C.

After eighteen hours examine the trays. The temperature of the "koji" should not be above 29° C. A higher temperature is due to serious bacterial contamination. Stir the "koji" bringing the bottom to the top, and breaking the beans apart. Heap the "koji" in two piles extending the length of the tray instead of spreading it evenly on the tray. Place the tray again in the mold room the temperature of which is now kept at 30°C.

Stir again after eighteen hours and break the beans apart. Cool the mass to 24°C. After a thorough stirring, form four furrows of the beans, running the width of the tray, and return the trays to the mold room.

After fourteen hours from the last stirring examine the "koji" again. It should have a yellow coating of the fruiting heads of *Aspergillus*.

Empty the "shoyu koji" in a tub containing salt solution of 20° to 22°. In Japan the brine is made by dissolving one

⁹ Soy and Related Fermentations, U.S. Dept. of Agr. Bull. 1152 (1923).

part of sea salt to two parts of water. Sea water is often used. The mass composed of molded beans and brine is called in Japan as "shoyu moromi."

On the first day inoculate the tub of "shoyu moromi" with four flasks, each containing 450 cubic centimeters, of wort extract broth and 5 per cent salt solution with a yeast culture, *Zygosaccharomyces* sp.

Start a new batch of "shoyu-koji" and empty a mature batch into the mash vat each day. Mature "koji" mixed with brine solution forms the "shoyu-moromi."

Let the tub of "shoyu-moromi" stand about ten months, stirring the mash daily and passing a blast of air into the material to supply oxygen to the microorganisms.

Press the mash and boil the soy sauce about two hours before bottling.

Nashimura claims that during the ripening process the powerful enzymes of *Aspergillus oryzae* act upon the carbohydrates and products of the wheat and soy beans and develop an agreeable flavor. He also found that the time of manufacture may be shortened by milling the roasted wheat and boiled soy beans thoroughly, by applying a temperature of not less than 35° and not more than 40° C., and by adding alcohol directly. With this method, the length of time of manufacture is shortened to five weeks only.

Oshima (1905), however, claims that during the ripening process the chief chemical changes that take place result from the action of proteolytic and diastatic ferments, and from the alcoholic ferments. Part of the proteid materials of the beans are converted to more soluble forms by proteolytic ferments. Glucose is produced from the diastatic fermentation. The alcoholic fermentation is noticeable only in the early stage of manufacture. The alcohol produced is decomposed and acid and other products are produced which account for the agreeable flavor of the soy sauce.*

VII. "NATTO"

"Natto" is a popular food among the Japanese people. It is used as a side dish and as a material in the preparation of confections. Its average composition is water, 61.84 per

* Quick process of soy sauce is done by acid hydrolysis of soy beans.

cent; albumen, 19.26 per cent; fat, 8.17 per cent; carbohydrates, 6.09 per cent; cellulose, 2.8 per cent; ash, 1.84 per cent. From these figures it may be easily seen that "natto" is highly nutritious. Besides, it is more digestible than boiled soy beans since it is softer and contains more peptone.

"Natto" may be made by boiling the soy beans to softness, and while hot, small portions are wrapped in rice straw. The bundles are tied at both ends and placed in a closed room where the temperature is kept from 35° to 40° C for twenty-four hours. The beans ferment and become a thick viscid mass with a peculiar odor.

VIII. "HAMANATTO"

"Hamanatto" is another Japanese preparation made from soy beans. It is of a brown color, of sticky consistency, with a salty taste, and has an odor similar to the fresh crust of brown bread.

It is prepared by boiling the beans to softness, than spreading them on straw mats, and mixing with them wheat flour in the proportion of six parts of flour to ten parts of beans. When the molds grow on the mixture it is sunned for three days. On the twelfth day ginger and salt are added and the mixture is kept in tubs for a period of thirty days. A weight is placed on top of the mixture while standing in the tub. which makes it compact.

Sawa¹⁰ found "hamanatto" to contain water, 44.74 per cent; albuminoid nitrogen, 3.57 per cent; fat 3.44 per cent; fiber, 6.87 per cent; total carbohydrates, excluding cellulose. 8.40 per cent; total ash, including salt added. 18.54 per cent. He also found that at least three different kinds of bacteria are present in this product.

IX. "YUBA"

"Yuba" is popular among both Chinese and Japanese. It is a thin, glossy, cream yellow brittle sheet very rich in protein. It is used in soups, as a wrapper, or fried.

"Yuba" is prepared by boiling soy-bean milk for about an hour. Then a small quantity of auramine is added. A

¹⁰ Cited by Piper and Morse, *The Soybean*, 1st Edition (1923) 245.

thick film is produced on the surface. This is removed by passing a stick underneath the surface. It is dried over a charcoal fire.

Table 8 shows the composition of "yuba" according to analyses made by Oshima and Nagao.¹¹

Table 8 — COMPOSITION OF YUBA

Authority	Water	Protein	Fat	Carbohy- drates	Ash
	Per cent	Per cent	Per cent	Per cent	Per cent
Oshima	18.31	49.65	18.0	11.82	2.22
Nagao	22.85	51.60	15.62	7.31	2.82

X. "MISO"

"Miso" is daily consumed by the population in the rural district of Japan. It is estimated that each person consumes an average of 40 grams of "miso" per day.

The two most important kinds of Miso are the white and red "miso". The white "miso" contains a small amount of salt and is fermented with rice "koji" for a period of four days only. It keeps only about ten days. The red "miso" is red in color, is more salty than the white "miso," and is fermented with barley "koji" for from one and one-half to two years. It keeps indefinitely. The composition of white and red "miso" is shown in Table 9.¹²

"Miso" is generally prepared by steaming the beans twenty-five hours. They are cooled and rubbed to a thick, uniform paste. To this paste is added the proper amounts of powdered "koji," salt, and water and the mass mixed thoroughly. This is placed in a wooden vat and the vat kept at a room temperature of 15° to 20° C.

If white "miso" is desired a small amount of salt is used. Rice "koji" is used to produce the flavor desired.

"Miso" is used in soup making, in cooking vegetables, in flavoring dishes, and in pickling vegetables.

The "koji" used for manufacturing "miso" is similar to that used in making "sake", a wine made by the Japanese

¹¹ Cited by Piper and Morse, *The Soybean*, 1st Edition (1923) 247.

¹² Kellner (1889); cited by Piper and Morse, *The Soybean*, 1st Edition (1923) 250.

from rice. It consists of barley or rice with a culture of *Aspergillus oryzae*, which contains diastatic, proteolytic, and inverting ferments.

XI. SOY-BEAN FLOUR

Soy-bean flour is made by grinding the dried soy beans or the press cake remaining after the oil has been pressed from the bean. It has become an important source of food for persons requiring a low starch diet, as diabetic patients, etc. In England there is on the market soy flour composed of 25 per cent soy-bean flour and 75 per cent wheat flour. This is being used in making soy bread. In Amsterdam soy biscuits are manufactured from this flour, which are being exported. In the United States soy-bean flour is also on the market. Soy-bean flour, with gluten, makes satisfactory bread, muffins, crackers, biscuits, macaroni, and several other preparations, as specialities for diabetic persons.

According to the findings of Bowers (1919) the protein of the soy-bean flour, if thoroughly cooked, is 91 per cent digestible; the carbohydrates about 94 per cent digestible.

Table 10 shows the composition of soy-bean and some other common flours on the market.¹³

The soy-bean oil is obtained from the bean by expression. The soy oil belongs to the semidrying class. It resembles cotton-seed oil in some respects and in its physical properties that of linseed oil. The crude oil is from yellow to dark brown color and has a faint beany odor. After refining and deodorizing it, it becomes lighter in color and nearly odorless and tasteless. It is used in the manufacture of lard and butter substitutes, and salad oils. It is also being very satisfactorily used in the manufacture of soaps on account of its low content of free fatty acids and unsaponifiable matter; and is also used in paints; waterproof goods; printing inks; lubricating; lighting; candle making; the manufacture of artificial rubber; the manufacture of linoleum; toilet powder; etc.

XII. SOY-BEAN MEAL

The cake remaining after the oil has been expressed from the bean is the meal. It is used as stock feed, fertilizer, and

¹³ Piper and Morse, *The Soybean*, 1st Ed. (1923) 224.

human food. Its composition is as follows: water, 7.59 to 17.37 per cent; protein, from 40.8 to 44.65 per cent; fat, 5.04 to 8.77 per cent; nitrogen-free extract, 21.12 to 30.89 per cent; ash, 4.90 to 6.59 per cent; fiber, 3.58 to 6.95 per cent.

The soy-bean meal when ground to a fine powder makes a fine flour for preparations that require a low starch content. It is also used for the preparation of soy-bean curd and soy-bean milk.

XIV. SOY-BEAN COFFEE

The soy bean when properly roasted and prepared makes a drink very similar to coffee in appearance and in flavor. This is being extensively used in Europe, especially in Switzerland, and in the United States, as a coffee substitute. In Japan and Russia roasted soy beans or soy-bean coffee is put up in small packages and sold as coffee.

XV. SOY-BEAN SPROUTS

Soy-bean sprouts may be grown by first thoroughly washing the beans and soaking in water several hours. They are then transferred to an earthen jar that contains a hole in the bottom for draining the excess of water, and this is lined with either a piece of bamboo mat or cloth. The beans are then covered with straw to keep out the light. They must be moistened at least three times a day. In about four to five days the sprouts are fully grown and ready for cooking. The soy-bean sprouts may be used in any way that green vegetables are used.

Table 11 shows the composition of soy-bean and mung-bean sprouts.¹⁴

Table 11 — COMPOSITION OF SOY-BEAN AND MUNG-BEAN SPROUTS.

Bean	Water	material Nitrogen	Fat	drates Carbohy-	salt Mineral
	Per cent	Per cent	Per cent	Per cent	Per cent
Soy	66.98	14.73	5.95	4.04	3.41
Mung	91.21	3.41	0.28	2.12	0.48

¹⁴ Piper and Morse, *The Soybean*, 1st Edition, (1923) 227.

Chapter IV

ROSELLE RECIPES*

WITH THE ASSISTANCE OF MEMBERS OF THE DIVISION

Roselle, *Hibiscus sabdariffa L.*, is native to India and Malaysia. It is used for making tarts, jellies, and wine. Roselle has been extensively cultivated in Australia for many years and as early as 1892 two large factories for putting up roselle jam were built there. The date of the earliest introduction of roselle into the United States has not been definitely determined but it is known that about 1896 it was brought to California from Australia.

Four varieties were introduced into the Philippines by P. J. Wester, horticulturist, Bureau of Agriculture, in 1905, the best of which are Rico and Victor. The plants of the Rico variety are from 1 to 2 meters tall, and are more spreading than the other varieties. The fruit is dark red. The red portion is the fleshy calyx. The fruit is from 40 to 50 millimeters long and 28 to 32 millimeters in diameter.

The plants of the Victor variety are more slender and upright. It fruits somewhat earlier than the Rico. The fruits are reddish and are about the same size as the Rico variety, but taper toward the end. Preparations from both the Rico and Victor varieties are of a brilliant red color.

According to P. J. Wester, roselle will thrive on any fertile soil, but will grow best in places where annual rainfall is ample. In the Philippines, the best time for planting is during the month of May and not later than June, and the fruit should be gathered 15 days after blossoming, otherwise the fruit will be fibrous and less juicy.

The yield per hectare is from 6,500 to 8,000 kilos. In Hawaii, up to 16,800 kilos are harvested per hectare if planted

* Popular Bulletin — January 23, 1932

* Roselle is now rare in the Philippines so it was first suggested that we delete this section. However, in a recent Fancy Food show held in June, 1998, in New York City. Roselle products were exhibited as exotic "NEW" products. With the current trend for the natural and exotic, this plant has a potential as an important agricultural crop again.

as intercrop with rubber, and if the entire field is devoted to roselle, the yield goes up to 19,000 kilos per hectare. Granting that the yield per hectare is only 8,000 kilos, if the crop is sold at five centavos per kilo, it means a gross income of ₱400 per hectare, which exceeds the income from planting rice, corn, or many other articles of food raised here.

The young leaves of the roselle are used as a substitute for spinach, or they may be cooked with fish or meat for making "sinigang" (a typical Filipino dish of either fish or meat cooked with an acid fruit or acid leaves, such as mango or tamarind leaves).

The Rico and Victor varieties are desirable for the preparation of drinks, jams, and jellies on account of their attractive, brilliant red coloring. The flavor of roselle is very similar to that of the cranberry, a very expensive article of food in the Philippines, which is important from the United States, and sells fresh at from ₱1.35 to ₱1.50 per kilo. The jam, jelly, sauce, and other preparations made from roselle are very similar in appearance and taste to those made from cranberry.

There is little doubt that if some of the excellent preparations made from roselle become better known, its planting and cultivation in our laboratory claim that it excels the many soft drinks commonly sold in Manila and the provinces from which thousands of pesos are realized daily. Many who have tried the roselle jelly have expressed the wish that it were available in the groceries.

The preparation of juice, jam, jelly, sauce, etc. at home and commercially, will mean an added delicacy for our table. a source of income for idle farms; utilization of the soil between trees as intercrop; a new article for export; reduction of imported juices, syrups, jams, jellies, sauces, etc., which are valued at hundreds of thousands of pesos annually.

PREPARATIONS

Some preparations that may be made from roselle are:

Jelly	Catchup
Jam	Sauce
Butter	Juice
Preserve	Syrup
Conserve	Wine
Marmalade	Vinegar

Nota
Chutney
Pickle

Paste
Punch
Cocktail

SOME USEFUL HINTS

The fruit of the roselle consists of the calyx, the red portion, and the capsule containing the seed. It is rather difficult to separate the calyx, or the edible portion, from the capsule, or refuse, with the fingers. By cutting the base of the fruit with a sharp knife the capsule can be easily removed.

Only porcelain or aluminum pans should be used in cooking the fruits as the acid content readily attacks other metals.

Wooden spoons are best for stirring.

Cheesecloth may be used as a filter for the juice, although felt is better.

Only stainless knives should be used for cutting.

If the preparation is intended to keep indefinitely it is best to have the bottles ready before starting the work. There are two types of preserving jars in the market. The screw-top and the glass-top jars, of pint, quart, and half gallon capacity. The screw-top jars are cheaper, but those that have the glass top have a few advantages over the others: namely, that the tops can be used repeatedly, that they are easier to seal and to open, that the detection of mold is made easier, and that they present a better appearance than those with the screw top.

Before preparing the jelly, one should become familiar with the steps in the preparation of jelly, such as the detection of the jelling point, and other important facts regarding jelly making.

ROSELLE JELLY

Cut the base of the fruit with a sharp knife.

Separate the calyces and wash them thoroughly.

Place in a porcelain pan and add enough water to cover them.

Boil briskly for 25 minutes. Strain the juice through cheesecloth (felt is better).

To each cupful of juice add from $\frac{1}{2}$ to $\frac{3}{4}$ cupful of sugar, and boil in a porcelain pan, over a strong fire, for 25 to 30 minutes, or until the jelling point is reached.¹

Fill the jelly glasses while the jelly is hot and let them stand undisturbed to cool.

Pour melted paraffin over the solid jelly and adjust the metal cap of the glass.

Label and store.

The jelly should be made as quickly as possible, otherwise a thick syrup results. In order to prevent too long cooking, a small quantity should be made at a time.

ROSELLE JAM

Cut the base of the fruit with a sharp knife and separate the calyx from the capsule. Wash the calyces thoroughly and boil in a porcelain pan with just enough water to barely cover them. Boil until they are tender. Pass the calyces through a meat grinder or mash with a masher and add sugar in the proportion of $\frac{3}{4}$ cupful of sugar to a cupful of calyces. Boil the mixture to a medium thick consistency.

If it is desired to keep the jam indefinitely, transfer the jam while hot to clean pint preserving jars, half seal the jars, and sterilize for 25 minutes in boiling water.

ROSELLE BUTTER

Separate the calyces and wash them thoroughly. Boil in small quantity of water until they are soft.

Cool and pass the pulp through a fine sieve (sinamay cloth may be used).

Measure the pulp and to each cup add from $\frac{1}{2}$ to $\frac{3}{4}$ cupful of sugar. Cook until the mass is medium thick.

Transfer the butter to pint jars; half seal them, and sterilize them for 25 minutes in boiling water.

Seal the jars completely after sterilization and cool.

Label and store in a cool, dry place.

ROSELLE PRESERVE

Separate the calyces from the capsules and wash them thoroughly.

Place them in a porcelain pan, add enough water to half cover them, and sugar in the proportion of 1 cupful of sugar to each cupful of calyces.

Cook slowly for 30 minutes.

Transfer while hot to pint or quart jars. Half seal the jars and sterilize; the pints 25 minutes and the quarts 30 minutes, in boiling water.

Seal the jars hermetically after sterilization, and let them stand in an inverted position on a dry board.

Examine for leaks, label, and store them in a cool, dry place.

ROSELLE CONSERVE

4 cupfuls roselle calyces	$\frac{2}{3}$ cupful boiling water
1 cupful cold water	1 cupful shelled pili nuts, cut into small pieces
2 small boxes seedless raisins	

Wash the roselle thoroughly. Place it in a porcelain pan, add the cold water and boil with the pan covered, until the calyces are soft.

Pass through a sieve, adding the boiling water while sifting.

Add the raisins and sugar, and boil for 15 minutes.

Add the nuts and continue cooking for 25 minutes.

Transfer the conserve while hot to pint jars, half seal them, and sterilize for 25 minutes in boiling water.

Seal tightly after sterilization and cool.

Label and store in a cool, dry place.

ROSELLE MARMALADE

Proceed as in roselle jelly, adding to the boiling jelly pieces of calyces boiled in 1 to 1 syrup.

ROSELLE PASTE

Proceed as in roselle butter but cook the butter longer until the mass becomes solid when cooled.

While hot, pour in a shallow pan about $\frac{1}{4}$ inch thick.

Cool and cut to desired pieces. Wrap each piece in oiled paper.

Keep in tightly closed jars to prevent weeping, or watering.

ROSELLE CHUTNEY

Wash the calyces thoroughly and drain.

4 cupfuls roselle	1 section garlic, sliced fine
4 cupfuls brown sugar	1 small piece of ginger root, sliced to thin pieces, crosswise
1 ½ cupfuls vinegar	1 small piece of ginger root,
1 hot pepper, sliced	1 teaspoonful salt

Boil the vinegar, salt, and brown sugar and strain through a piece of cheesecloth. Return to the pan and boil again until it becomes medium thick. Add the roselle and continue boiling until soft. Add the raisins, the sliced garlic, and hot pepper and boil for 5 minutes. Lastly, add the sliced ginger and boil until thick.

Pack in well sterilized jars while boiling hot, and seal hermetically.

Roselle chutney may be served with curries, roast meats, sausages, and fried fish.

ROSELLE PICKLE (SWEET-SOUR)

Wash the calyces and drain.

Place in a porcelain pan and add a very small quantity of cold water. Cover the pan and cook slowly until the roselle is tender.

Make a solution of 2 cupfuls of brown sugar, 1 cupful of vinegar, 2 teaspoonfuls salt, and boil. Strain through a piece of cheesecloth.

Place the solution in a porcelain pan, add the cooked roselle, and boil to a thick consistency.

Add small amounts of nutmeg, allspice, and cinnamon, and cook 1 minute longer, stirring constantly.

Pack while boiling hot in well-sterilized jars and seal tightly.

Label and store.

ROSELLE CATCHUP

Wash the calyces of the roselle thoroughly.

Boil for 30 minutes in enough water to half cover the calyces.

Pass the pulp through a piece of "sinamay" cloth.

Place the pulp in a porcelain pan and to each cup of the pulp add:

1 teaspoonful salt	5 tablespoonfuls vinegar
¼ cupful sugar	¼ teaspoonful each, of cloves
1 teaspoonful mustard	cinnamon, nutmeg, allspice,
½ teaspoonful ground white pepper.	and paprika

Mix the spices and tie in a piece of cloth.

Boil the roselle pulp with the salt, vinegar, sugar, pepper, and mustard dissolved in the vinegar, for 15 minutes. Drop the bag of spices in the boiling pulp and continue cooking until the catchup reaches the consistency of tomato catchup. Remove the bag of spices, transfer the catchup while hot to clean, sterilized bottles, seal the bottles and sterilize for 15 minutes in boiling water.

One-tenth of 1 per cent of sodium benzoate may be added to the catchup. If this is added no sterilization will be needed.

ROSELLE SAUCE NO. 1

Wash the roselle thoroughly and drain. Chop to small pieces with a stainless butcher knife and place in a porcelain pan.

To ½ kilo of roselle calyces add:

1 cupful water	½ teaspoonful ginger, chopped fine
⅛ cupful chopped onion	⅛ teaspoonful each, of cinnamon, mustard, and nutmeg
⅛ cupful chopped green pepper	1 tablespoonful salt
⅛ cupful chopped red pepper	
¼ cupful sugar	⅛ teaspoonful cayenne pepper

Mix the above ingredients together and boil until medium thick.

Place in clean jars, half seal, and sterilize for 25 to 30 minutes.

Seal completely after sterilization.

Label and store.

ROSELLE SAUCE NO. II

Clean the roselle thoroughly. Pass through a grinder. To each pint (2 cupfuls) of chopped roselle add 1 pint of water;

ROSELLE VINEGAR

Proceed as in roselle wine and when the alcoholic fermentation is completed, add a small amount of mother of vinegar, or good, fresh vinegar, and let the solution stand in a glass or porcelain container with 4 thicknesses of cloth covering it, to prevent the fruit flies from getting into it. The vinegar is ready in about 2 months, or longer. Decant the clear vinegar and bottle in clean, dry bottles.

ROSELLE NATA

While the acid or acetic fermentation is taking place, a pinkish, gelatinous film grows on top. In about 3 weeks the film is from $\frac{1}{2}$ to $\frac{3}{4}$ of an inch thick. Collect this "nata" and soak it in plenty of water. Change the water at least four times a day. Continue the operation until the odor of the vinegar can no longer be detected. Slice to desired pieces and blanch in boiling water. Rinse and drain. Make a syrup of 1 part sugar and 1 part water. Boil slowly in this solution 30 minutes. Drain and pack the pieces in preserving jars. Strain the syrup left after boiling the nata in it, and to every cupful add $\frac{1}{4}$ cupful of roselle syrup. Bring to a boil and fill the jars; sterilize for 30 minutes; and seal completely after sterilization. Cool the jars in an inverted position. Label and store in a cool, dry place.

ROSELLE PUNCH NO. I

5 cupfuls roselle juice Juice of 5 limes
1 cupful orange juice

Mix the above and serve cold.

If intended to keep, bring to a boil and bottle while hot. Sterilize the bottles 10 minutes, in boiling water.

ROSELLE PUNCH NO. II

5 cupfuls roselle juice 1 cupful orange juice
1 cupful chopped pineapple Juice of 3 limes

Mix the above and proceed as in Punch No. I. This must be served cold.

ROSELLE-WHISKY PUNCH

1 cupful roselle juice From $\frac{1}{2}$ cupful to 1 cupful whisky
1 teaspoonful lime juice

Mix and chill. Serve cold.

ROSELLE-FRUIT COCKTAIL

- | | |
|------------------------------------|-------------------------|
| 2 cupfuls roselle juice | ½ cupful Cherry wine |
| 1 cupful shredded native pineapple | 6 tablespoonfuls brandy |

Mix the roselle juice and shredded pineapple and boil 10 minutes. Add the cherry wine and brandy and bottle in sterilized bottles. Half seal and sterilize 15 minutes. Seal completely. Cool and store.

Add 1 cupful of banana cut into small cubes and 1 cupful of mandarin pulp, and chill before serving.

ROSELLE SANDWICHES

Sandwiches may be made from sliced American bread, butter, and roselle jam, jelly, conserve, or butter.

ROSELLE-CHEESE SANDWICHES

Make a paste from roselle jelly and grated cheese. Insert this filler between two slices of bread from which the crust has been removed.

ROSELLE-PORK SANDWICHES

Make two-layer sandwiches using thin slices of roast pork in one layer, and roselle jelly, jam, or butter in the other.

FRENCH TOAST WITH ROSELLE SYRUP

Slice the bread to ¼ inch thick. Cut off the crust and dip in a mixture of 1 cupful of milk, 3 well-beaten eggs, and a few pinches of salt. Fry in hot, deep lard until brown. Serve with roselle syrup.

ROSELLE PIE NO. I

- | | |
|---------------------------------------|--------------------------|
| 1 ½ cupful flour | 1 teaspoonful salt |
| 6 tablespoonfuls butter or shortening | Water, enough to moisten |

Sift the flour and salt twice, and work in the butter or shortening with the fingers until it has the consistency of corn meal. Add the water gradually, adding only enough so the dough clings together. Chill and divide into two parts. Roll out one part to ¼ inch thickness, keeping the paste as nearly circular as possible. Spread in a pie pan and cut the sides with a knife. Prick the bottom with a fork and bake until the crust

is brown. Fill with roselle preserve, jam, or conserve, adding a small quantity of water if needed, and cover with the top crust. Bake in a moderate oven until the top crust is brown. The top heat of the oven may be used while baking the top crust.

ROSELLE PIE NO. 2

1 cupful roselle juice	¼ teaspoonful salt
½ cupful sugar	1 tablespoonful butter
3 tablespoonfuls flour	5 tablespoonfuls sugar for the meringue
3 eggs	

Boil the roselle juice; add the sugar, salt, and the flour suspended in a small amount of water; and continue cooking, stirring constantly over hot water, for 15 minutes. Add the butter and egg yolks and stir in quickly. Take off the fire, cool, and fill a baked pie crust made as per directions under Roselle Pie No. 1. Cover with meringue made from stiffly beaten egg whites and sugar, and bake in a slow oven (300°F) until brown.

ROSELLE TARTLETS

1 cupful roselle calyces thoroughly washed and chopped	1 cupful sugar ¼ cupful water
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Mix the above and boil 15 minutes. Turn into small pie pans, about 3 inches in diameter, previously covered with pie crust made as in Roselle Pie No. 1. Cover with small strips of pie dough, about ⅛ of an inch wide, and bake in a slow oven for 15 minutes.

ROSELLE FRIED PIE

Drain the juice from roselle conserve, the preparation of which has already been described.

Make puff paste, roll out to ⅛ of an inch in thickness, and cut to small circles about 2 inches in diameter. Place 1 tablespoonful of roselle conserve in the center of each circle and moisten the sides with cold water. Cover with another circle of paste and press the edges firmly together. Fry in deep, hot fat until brown.

PUFF PASTE

1 cupful flour	1 egg yolk
1 cupful butter	Cold water, enough to moisten
1 teaspoonful sugar	

Divide the butter into two parts, and place in an ice box or refrigerator to chill.

Sift the flour and sugar twice. Work in $\frac{1}{2}$ cupful of butter. Then moisten with the egg yolk and enough water to bring the dough together. Knead until smooth. Roll out to $\frac{1}{2}$ inch thickness. Fold in the rest of the butter and roll as thin as possible. Fold the paste in 3 layers and place in the ice box to harden. When cool and firm, roll out again and fold in 3 layers, as previously done, and place again in the ice box to chill (for about 20 minutes). Roll out to $\frac{1}{8}$ inch thickness.

ROSELLE PUFF

1 cupful flour	1 tablespoonful sugar
1 cupful butter	Cold water, enough to moisten
1 egg yolk	

Proceed as in puff paste.

Roll out to $\frac{1}{2}$ inch thickness and cook in a hot oven (400°F.) until brown.

Remove the inner portion of the puff paste while hot, and cool. Fill with roselle marmalade and chopped pili nuts.

ROSELLE PATE CHOUX

1 cupful flour	1 cupful water
1 cupful butter	$\frac{1}{4}$ teaspoonful vanilla extract
2 tablespoonfuls sugar	A few pinches of salt
2 egg yolks	

Place the water, butter, salt, and sugar in a pan and bring to a boil. While boiling, take the pan from the fire and add the vanilla. Then add the flour, previously sifted, and beat well. When a smooth paste is produced, place the pan back on the fire and cook very slowly for 10 minutes. Take off the fire and place in a pastry bag and force through the tube about 1 tablespoonful of the paste onto a buttered, floured baking sheet. Bake in a moderate oven until the puff is well browned and crisp.

Split and fill the inner portion with roselle jelly.

ROSELLE OMELET NO. 1

4 tablespoonfuls roselle jelly	A few pinches of salt
4 eggs	A few pinches of pepper

Beat the eggs, add the pepper and salt and fry with butter in a wide, flat pan, to a thin, round sheet.

Take out of the pan, spread with the roselle jelly and roll the omelet.

ROSELLE OMELET NO. 2

1 cupful roselle calyces well 1 tablespoonful butter
washed, and sliced 2 eggs
1 cupful milk

Cook the roselle in a very small amount of water. Add the water, butter, and eggs and bake in a shallow pan, in a moderate oven (300° to 350°F.), until brown.

This may be served with roast pork or other meats.

ROSELLE SNOW

2 egg whites 1 cupful roselle butter

Beat the egg whites to stiffness and fold in very gradually the roselle butter.

Place in a glass dish, chill, and serve with custard cream made as follows:

1 cupful soy-bean milk ½ teaspoonful vanilla
2 egg yolks A pinch of salt
4 tablespoonfuls sugar

Boil the milk in a double boiler. Beat the egg yolks with salt and sugar, and add the hot milk and vanilla. Mix well and return to the double boiler and cook, stirring constantly, until thick.

ROSELLE JAM TURNOVER

Make puff paste by following the recipe for puff paste.

Roll out to 1/10 inch thickness and cut to small circles, about 3 inches in diameter. Heap one side of the circle with 1 tablespoonful of roselle jam, to which has been added to small quantity of chopped pili nuts, and fold over the other side of the circle so the edges of the two sides meet. Wet the sides with cold water and press down with a fork to seal them together. Brush with egg yolk; sprinkle with sugar, and bake in a hot oven until brown and crisp.

ROSELLE-CORNMEAL FRITTERS

- | | |
|--------------------------|-----------------------|
| 4 heaping tablespoonfuls | 1/2 teaspoonful salt |
| corn meal | 1 tablespoonful sugar |
| 2 eggs | Lard |
| 1 cupful milk | |

Beat the eggs well and add the milk, sugar, and salt. Then add the cornmeal and beat until a smooth batter is produced. Drop the batter, about one tablespoonful at a time, in the hot fat, and fry until crisp. Drain well, and serve with roselle preserve.

BREAD-ROSELLE PUDDING

- | | |
|--|-------------------|
| 2 cupfuls of stale bread cut into small pieces | 1 egg |
| 1 small box of seedless raisins | 1 cupful milk |
| 1/2 cupful sugar | A pinch of nutmeg |
| 3 tablespoonfuls finely chopped suet | |

Soak the bread in water until it becomes very soft. Squeeze dry. Beat out all the lumps with a fork, add the raisins, suet, sugar, and nutmeg and mix well. Beat the egg well and add the milk; add this to the bread mixture. Place in a deep buttered pan and cook in boiling water until done. Place the pan in an oven to brown the top, or place a small thin piece of thin or iron sheet on top and place a few red-hot pieces of charcoal over it to cook and brown the top. Serve with roselle syrup.

ROSELLE SOUFFLE NO. 1

- | | |
|--------------------------|------------------------|
| 1 cupful roselle butter | 2 tablespoonfuls sugar |
| 1/4 cupful roselle juice | 1/4 cupful milk |
| 1/2 cupful flour | 2 egg yolks |
| 2 tablespoonfuls butter | 3 egg whites |

Add the roselle juice to the milk. Add this to the flour previously stirred with the melted butter. Cook the mixture until it does not adhere any longer to the sides of the stew pan. Cool slightly and beat in the egg yolks, sugar, and the roselle butter. Stir slightly while adding the stiffly beaten egg whites. Place in a well-buttered pan and back slowly (40-45 minutes) in a moderate oven.

ROSELLE SOUFFLE NO. 2

- | | |
|-------------------------------|------------------------|
| 1/2 cupful roselle juice | 1 tablespoonful butter |
| 3 tablespoonfuls cake crumbs | 2 eggs |
| 3 tablespoonfuls bread crumbs | 1/2 cupful milk |
| 2 tablespoonfuls sugar | |

Mix the roselle juice and milk, and bring to a boil. While hot, pour over the mixed cake and bread crumbs.

Cream the butter and sugar, add 2 egg yolks and 2 egg whites and beat well. Then add the crumbs and mix well. Bake in a moderate oven, from 25 to 30 minutes. Spread on the stiffly beaten white of egg, sprinkle sugar on top, and return to the oven. Bake until the meringue browns slightly.

ROSELLE PASTE FRITTERS

1 cupful roselle paste	1/2 teaspoonful salt
3 tablespoonfuls roselle juice	2 tablespoonfuls sugar
1 cupful flour	2 eggs
1 teaspoonful baking powder	

Sift the flour, baking powder, and salt. Beat the sugar, egg yolks, and roselle juice and add these to the flour mixture. Fold in the stiffly beaten egg whites, and lastly fold in the roselle paste, made as per recipe under roselle paste, shaped to small balls. If the batter is not thin enough it may be thinned with a small amount of roselle juice. It should be thin enough to fold in the fruit and thick enough to hold together. Drop the mixture by tablespoonfuls in hot, deep fat and fry until brown.

ROSELLE-CLARET GELATINE

To 1/2 cupful of claret wine add 2 1/2 cupfuls of roselle juice, 4 tablespoonfuls sugar, and 3 tablespoonfuls of powdered gelatine. Mix, bring to a boil and continue boiling until all the gelatine is dissolved. Strain through a piece of cheesecloth and pour into a mold while hot. Chill to set. Remove from the mold and place in a jelly plate and serve immediately.

ROSELLE-ORANGE GELATINE

Dissolve 1/2 cupful of gelatine powder in 1 1/3 cupfuls water over a gentle heat. Divide into 3 equal parts.

To one part add 1 cupful of roselle syrup and mix thoroughly; to another add 1 cupful milk and 4 tablespoonfuls sugar; and to the rest add 1 cupful of orange juice sweetened with 3 tablespoonfuls sugar and color blue with certified food coloring.

Pour the jelly solution in the mold and chill in the ice box. When solid pour on the milk solution and chill again. When it has solidified pour on the orange solution and chill once more.

Remove from the mold by dipping the mold in a pan of hot water.

ROSELLE AGAR (GULAMAN)

Dissolve 10 grams of agar in 3 cupfuls of roselle juice.

Pour in a pan and set to cool. Cut into very small cubes and place in a deep dish. Pour over this coconut milk sweetened with sugar.

ROSELLE-BANANA AGAR

Dissolve 10 grams of agar and $\frac{1}{4}$ cupful of sugar in 3 cupfuls of roselle juice. Add 1 cupful of sliced banana (saba banana boiled soft in water) and pour into a mold.

Remove from the pan and place in a deep dish.

Serve with thick coconut cream.

ROSELLE SHORTCAKE NO. 1

1 cupful flour	1 tablespoonful sugar
1 teaspoonful baking powder	$\frac{1}{8}$ cupful butter or crisco
$\frac{1}{4}$ teaspoonful salt	$\frac{1}{2}$ cupful milk

Mix the flour, baking powder, salt, and sugar and sift twice. Work in the butter with the finger tips, and add the milk gradually. Place on a floured board; pat and roll out to $\frac{1}{8}$ inch thickness. Place in a buttered pan and bake from 12 to 15 minutes in a hot oven. Split and place in between and on top roselle calyces cooked in 1 to 1 syrup, or roselle preserve. Cover the top with whipped cream or canned milk boiled to thickness with a very small amount of cornstarch.

ROSELLE SHORTCAKE NO. 2

1 cupful flour	$\frac{1}{6}$ cupful butter
2 teaspoonfuls baking powder	2 egg yolks
$\frac{1}{4}$ teaspoonful salt	$\frac{1}{6}$ cupful milk
4 tablespoonfuls sugar	

Mix the flour, baking powder, salt, and sugar, and sift twice. Work in the butter with finger tips, gradually add the egg yolks and then the milk.

Proceed as in shortcake No. 1.

ROSELLE SHORTCAKE NO. 3

1 cupful flour	3 tablespoonfuls butter
2 teaspoonfuls baking powder	1 egg yolk
¼ tablespoonful sugar	1/5 cupful milk

Mix the flour, baking powder, salt, and sugar, twice. Work in the butter with the finger tips, and add the egg yolk. Then gradually add the milk and proceed as in shortcake No. 1.

Split the cake and spread butter on each piece. Cover the bottom piece with soy-bean cream made by boiling 1 cupful of soy-bean milk, 4 tablespoonfuls sugar, and 2 egg yolks until thick.

Then cover top with roselle preserve, and place the other piece of cake on top. Cover again with soy-bean cream and then with roselle preserve.

ROSELLE JELLY PANCAKE

3 eggs	1 cupful milk
1 tablespoonful sugar	½ cupful flour
½ teaspoonful salt	1 tablespoonful butter

Beat the yolks of 3 eggs and add the sugar, salt, and ½ cupful milk. Stir in the sifted flour, and add the other half cupful of milk and the melted butter. Fold in the stiffly beaten egg whites, and bake in a shallow pan, to about 1/6 inch thickness. Spread on the roselle jelly and roll the cake. Sprinkle with sugar and burn the sugar covering the cake with a red hot iron, or a butcher knife heated to redness.

ROSELLE ROLLED CAKE

1 cupful flour	½ cupful sugar
1 teaspoonful baking powder	4 eggs
¼ teaspoonful salt	½ teaspoonful vanilla
4 tablespoonfuls milk	

Sift the flour and baking powder 3 times.

Beat the egg yolks with the sugar until thick and lemon colored. Add the milk and vanilla and beat again. Gradually add the flour from the sifter and when the paste is smooth, fold in the well-beaten egg whites. Pour in a shallow, rectangular pan and bake in a moderate oven from 10 to 12 minutes.

Take out of the pan while hot and place on a clean piece of Manila paper. Spread on a thick layer of roselle jam or butter

and roll the cake while hot. Set aside to cool. Cut crosswise in $\frac{1}{4}$ inch slices and serve.

JELLY-SAUCE SPICE CAKE

2 cupfuls roselle	1 egg
1 cupful sugar	$\frac{1}{2}$ teaspoonful salt
$\frac{1}{2}$ cupful butter or shortening	1 $\frac{1}{2}$ cupfuls flour
A few pinches each of cinnamon, nutmeg, cloves and all spice	2 teaspoonfuls baking powder
	$\frac{1}{4}$ cupful chopped pili nuts

Cream the butter and sugar. Add the roselle, chopped and boiled to softness in a small amount of water, then the beaten egg.

Sift the flour, spices, salt, and baking powder twice, and add the chopped nuts. Add this to the butter and sugar mixture and mix thoroughly. Bake in 2 layers in a moderate oven (375°F.) for 20 to 25 minutes.

ROSELLE-MERINGUE SPONGE CAKE

$\frac{1}{2}$ cupful roselle syrup	6 eggs
$\frac{1}{2}$ cupful sugar	$\frac{1}{4}$ teaspoonful salt
1 cupful flour	

Boil the roselle syrup and sugar until it threads.

Pour little by little over the stiffly beaten egg whites, beating constantly until it cools. Then add the beaten egg yolks and salt; mix well and fold the flour into the mixture. Bake in a moderate oven for 1 hour at 300°F.

ROSELLE ANGEL CAKE

$\frac{1}{2}$ cupful roselle jelly	1 teaspoonful cream of tartar
$\frac{3}{4}$ cupful flour	$\frac{1}{4}$ teaspoonful salt
1 cupful sugar	$\frac{1}{2}$ teaspoonful vanilla
Whites of 8 eggs	

Beat the egg whites until frothy, add the cream of tartar, and beat until stiff. Gradually add the sugar, continuing the beating, and when all the sugar is added fold in the flour mixed with salt and sifted at least 3 times. Add the vanilla, and bake in an ungreased pan for about 50 minutes. When the cake has risen and begins to brown cover it with a piece of paper to prevent burning the top. Melt the jelly and pour over the cake while hot.

ROSELLE LAYER CAKE

½ cupful roselle jam	3	tablespoonfuls cornstarch
¼ cupful finely chopped pili nuts	1	½ teaspoonfuls lime juice
1 ½ cupfuls flour	5	tablespoonfuls cold water
1 ½ teaspoonfuls baking powder	1	½ cupfuls sugar
½ teaspoonful salt	1	teaspoonful vanilla
9 eggs		

Beat the egg yolks until thick and lemon colored. Add the sugar and beat again. Then add the lime juice, water, and vanilla and mix thoroughly. Gradually add the well-sifted flour, salt, and baking powder, and lastly fold in the egg whites beaten very well but not to stiffness. Bake in 3 well-buttered layer-cake pans. Remove the cake while hot and cool in a wire basket. Place the layers one on top of another, filling between the layers with roselle jam mixed with chopped nuts.

Cover the cake with cream frosting made as follows: Cream ¼ pound of butter with 1 cupful of sugar, and add little by little while beating, ⅓ to ½ cupful of milk.

ROSELLE ICE

4 cupfuls roselle juice (see roselle juice)	½ cupful sugar
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Dissolve the sugar in the juice and strain through a piece of fine cloth. Freeze in an ice-cream freezer, or better still in a mold.

The roselle syrup may be used instead of juice, 2 cupfuls of syrup diluted with 2 cupfuls of water and frozen will make about the same ice.

ROSELLE SHERBET

1 cupful roselle jam	4	tablespoonfuls sugar
	4	cupfuls milk

Mix and freeze.

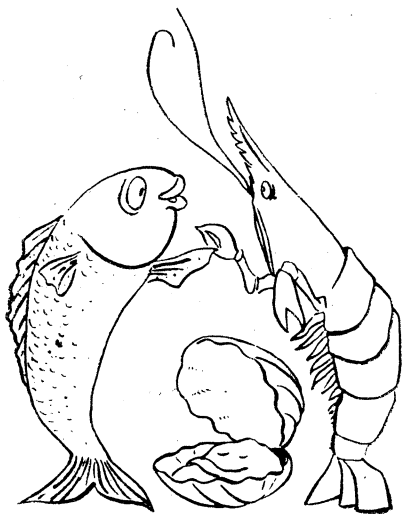
ROSELLE ICE CREAM

1 cupful roselle jam	4	tablespoonfuls sugar
	4	cupfuls of cream

Mix and freeze.

Chapter V

FISH — WE LIKE IT FRESH



Over there when they mean food they say "bread'n butter." Here we say "rice and fish." We are a fish — eating people.

The term fish includes other water animals — oysters and clams; lobsters, crabs, prawns and shrimps. Except in inland towns, far from fish streams and ponds, we cook our fish when still fresh. Now and then we get them dried and salted, or smoked or canned.

Our typical housewife can't be fooled about the condition of fish offered for sale in the markets. In spite of the remonstrations of the vendor she pokes a finger into the fish. If its flesh is firm and resilient, good. She knows well enough, that this method is not fool-proof. The vendor sometimes packs slightly stale fish in ice to stiffen, instead of packing it fresh to preserve it.

So our housewife looks her fish in the eye and examines its gills. Fresh fish has full and prominent eyes with a jet-black pupil and transparent cornea. Its gills are usually red. Not-so-fresh fish have eyes with that sunken, lack-luster, cloudy look. It's gills turn pale or gray.

Again the eye-and-gill test may not be conclusive. Some fish retain the black pupil in their eyes long after they have lost freshness. And to retain the color of the gills vendors may

wash the fish frequently. And anyhow some fish have naturally pale gills. So now our housewife simply smells the fish. She may not be able to detect a slight staleness but she certainly will know a frank, putrid odor.

Our housewife, of course, does not take as long to decide whether the fish she's buying is fresh or not as we do in describing the different tests she uses. Automatically she employs one test after another. It's a joy to watch her. From long experience she has gotten the knack for determining whether fish is worth testing or not. Because sometimes she'll take one look at some fish or a pile of shrimps and know before she has touched it that the fish or shrimps are no good.

She will like to vary ways to prepare fish besides the common methods of boiling, broiling and frying. She can steam them or bake them or combine them with other foods, for attractiveness and improved taste.

FIFTY RECIPES FOR FISH AND OTHER SEA FOODS

SHRIMP-PINEAPPLE SALAD

Boil $1\frac{1}{2}$ cups of shrimps in $\frac{1}{2}$ cup of water and $\frac{1}{2}$ teaspoon of salt. Remove the skins and cut fine.

Cut 6 pieces of canned pineapple in small pieces. Add 1 cup of sliced shrimps and 6 tablespoons of mayonnaise, and chill the mixture.

Place the mixture on a platter and smooth with a spoon. Garnish by placing 2 whole round pieces of canned pineapple on top. Place 1 medium-sized shrimp between the slices of pineapple. With cake decorator tubes squeeze different-colored mayonnaise around the pieces of pineapple to give them the appearance of butterfly wings.

FISH CHOWDER

1 cup flaked fish	4 slices bacon cut in small pieces
1 cup sweet potatoes (previously boiled and cut in small cubes)	2 cups coconut milk diluted with an equal amount of water
1 onion cut in small pieces	5 tablespoons coconut cream
2 tablespoons butter	

½ teaspoon pepper

1 segment garlic

1 teaspoon salt

Boil the fish in ½ the amount of coconut milk to which is added some calamansi juice. Cool, and flake the fish, removing all bones.

Fry the bacon in butter until crisp, then the garlic until brown. Add the onion, fish, and potatoes, salt, and pepper, and continue frying 3 minutes. Add the rest of the coconut milk and let it boil 2 minutes. Add the coconut cream just before serving. Serve with crackers.

FISH SOUP

Clean the fish well and remove the skin and bones.

Chop the meat of one fish with 1 onion, 2 green onions, 1 branch of parsley, 1 slice of bread, and 1 tablespoon of flour. Add 2 well-beaten eggs and mix thoroughly.

Make into small, round balls, about the size of marbles. Wet the finger tips with lemon juice while molding the balls.

Roll in flour and fry in hot fat.

Boil the head, skin, and bones of the fish for 45 minutes, in a covered casserole, with 4 cups of water, 1 sliced onion ½ cup of white wine, 1 teaspoon of salt, 1 sliced carrot, and a pinch of pepper. Strain the soup and cool. Add the well-beaten yolks of 3 eggs and bring to a boil. Drop the fried fish balls in the soup just before serving.

(Baños, dalag, dalagang bukid, navajita, and other similar fishes may be used.)

HALAAN SOUP

½ cup chopped halaan

½ medium-sized onion, sliced

1 tablespoon chopped ham

2 cups clam soup

3 tablespoons grated carrot

½ cup milk

4 tablespoons inkama (sinka-kamas)

2 tablespoons butter

1 egg

1 teaspoon salt

Pinches pepper

Fry the onion in butter until partially cooked; add the clams, ham, the clam soup, and the milk with the beaten egg. Boil 10 minutes. Add the carrot and inkama and continue boiling until the vegetables are tender. Serve hot.

BAR GLACE A LA VLADIMIR (PLAT FROID)

Clean the fish well and place on a rack in an upright position. Put a rolled towel on each side and tie the fish and towel to the rack to keep the fish in position.

Place the rack in a pan containing a boiling mixture of 1 cup of vinegar, 1 cup of white wine, 1 teaspoon salt, a few parsley leaves, 1 small carrot cut into small pieces, 1 sliced onion, and 1 laurel leaf.

When the fish is cooked remove from the fire and cool. Drain the fish and remove the skin.

Place the fish on a platter with the back up and cover with 1 cup mayonnaise dressing to which has been added 2 sheets of gelatine dissolved in a small amount of hot water. Place the fish in the ice box. When the dressing hardens transfer the fish to a platter containing a mound of boiled rice in the form of a cake, 2 inches high and a little longer and wider than the fish.

Place the fish back upward on the rice cake and garnish with thin half slices of lemon and with 4 hard-boiled eggs prepared as follows:

Cut the hard-boiled eggs lengthwise in halves. Remove the yolks and add to them 3 tablespoons mayonnaise. Divide the mixture into 2 equal parts. To one part add 2 tablespoons of tomato sauce, and seasoning. To the other part add 2 tablespoons of spinach pulped and passed through a fine sieve and seasoned to taste. Fill the egg whites with the fillers (tomato sauce and spinach sauce), and arrange alternately around the platter with sliced lemon.

FISH WITH VINEGAR SAUCE

Clean the fish well. Wrap in banana leaves and tie at the ends. Boil in the following mixture for 40 minutes:

4 cups water	1/8 teaspoon black pepper
2 tablespoon olive or Wesson oil	2 sliced tomatoes
Wesson)	1 large onion, sliced
2 tablespoons vinegar	

Drain the fish and unwrap it. Lay on a platter and pour over it the vinegar sauce made as follows:

Chop into very fine pieces the yolks of 2 hard-boiled eggs and smooth to a thin paste with 8 tablespoons of Wesson oil and 2 tablespoons of vinegar. To this add:

1 sweet red pepper, roasted,
peeled, and chopped into
fine pieces
4 green onions (with leaves),
finely cut crosswise
Whites of 2 hard-boiled eggs,
finely chopped

1 ripe tomato, roasted, peeled,
seeds removed, and chop-
ped into fine pieces
1 small onion, finely chopped
and worked with salt,
rinsed, and drained

Mix thoroughly.

(This recipe may be used for either lapu-lapu, tanguingui, apahap, talakitok, bakoko, or pampano.)

FISH WITH GREEN SAUCE

Clean the fish, sprinkle with 1 tablespoon of salt, and let it stand for 15 minutes.

Drain, place it in a pan containing 2 cups of water, 1 sliced onion, 2 ripe tomatoes, halved, 1 teaspoon of salt, and a pinch of pepper. Boil 30 minutes.

Strain the soup left and make gravy from it by the addition of 1 tablespoon of flour. Season with salt and pepper and boil until thick. The gravy may be colored green by adding kinchay, or green onion juice to it.

FISH CURRY AND SAUCE

1 teaspoon flour	1 tablespoon minced onion
1 teaspoon curry powder	¼ cup coconut milk
1 teaspoon lemon juice	1¼ cups water
2 tablespoons butter	1 teaspoon salt
Pinch black pepper	

Boil the fish for 5 minutes in ½ cup of water, ½ teaspoon of salt, and a pinch of pepper. Drain and lay aside.

Fry the onion in butter and add the water in which is dissolved 1 teaspoon of flour. Boil 2 minutes. Add the curry powder, lemon juice, salt, and fish; boil 10 minutes, or until the gravy thickens. Add the coconut milk to which is added ¼ cup of water and continue boiling 3 minutes. Lay the fish on a platter, pour the gravy over it, and arrange mounds of boiled rice on either side.

(Use either bakoko, apahap, lapu-lapu, talakitok, or mayamaya.)

LAPU-LAPU WITH VEGETABLE

Boil or steam the fish.

Lay the fish on a platter and cover it with a sauce made as follows:

In 2 tablespoons of butter brown 1 tablespoon of flour, $\frac{1}{2}$ teaspoon of salt, and a pinch of pepper. Add 2 cups of chicken broth in which the yolks of 3 hard-boiled eggs are ground, and heat until thick.

Garnish the fish by covering it with sweet pickles, boiled carrots, and the whites of 3 hard-boiled eggs, all finely chopped and laid alternately side by side in diagonal lines across the fish.

(This recipe is suitable for any fish mentioned under Recipe No. 1.)

FISH WITH CHEESE

Clean the fish well and sprinkle with 1 tablespoon of salt. Let it stand 15 minutes. Drain the fish well, spread over it 2 tablespoons of butter and 5 tablespoons of grated cheese. Lay it in a baking pan containing 2 tomatoes and 1 onion, each quartered, and 3 cups of chicken broth.

Place the pan in a moderate oven, and bake about 35 minutes, basting the fish every few minutes to prevent burning.

Make a cheese gravy by browning 2 tablespoons of flour in 3 tablespoons of butter, add the remaining broth, and heat until thick. To this add 2 tablespoons of grated cheese. Pour the mixture over the fish.

Garnish with either asparagus or artichoke.

BIA WITH COCONUT MILK

Clean the bia, boil it slowly for about 15 minutes in 1 cup of coconut milk, $\frac{1}{2}$ teaspoon of salt, and the juice of 5 calamansi.

Lay the fish on a platter and pour over it a gravy made from the stock in which it was cooked and boiled thick with one tablespoon of flour.

(Bia is the most suitable fish for this recipe. However, other fishes may also be used.)

FISH WITH SABA BANANA

Clean the fish, sprinkle with salt, and lay aside for 10 minutes.

Wrap in banana leaves and boil for 30 minutes in the following mixture:

- | | |
|-------------------|----------------------------|
| 4 cups water | 1 teaspoon salt |
| 3 sliced tomatoes | A few pinches black pepper |
| | 1 sliced onion |

Drain, unwrap, place on a platter, and cover with mayonnaise dressing.

Garnish with boiled ripe saba bananas, cut lengthwise in 1/4-inch slices.

TOCHO

- | | |
|--|---|
| 1 baños | 2 tablespoons tahuri |
| 2 tablespoons ginger cut into very thin, narrow strips about 3/4 inch long | 2 tablespoons tausi |
| 2 sections garlic, cut finely | 1 onion sliced in long, narrow strips |
| 6 fair-sized tomatoes or 4 large tomatoes, minced | 1 cake toqua, cut into pieces 3/4 inch long and 1/8 inch wide |

Clean the fish and cut in pieces 1/2 inch thick. Salt and let stand 15 minutes. Drain and wipe dry with a clean towel. Fry in hot lard until brown and lay aside.

Sauté the onion and the toqua and lay aside.

Sauté the garlic, ginger, and tomatoes. Add to this the tahuri dissolved in 1 cup of water, then the tausi, and the fried toqua and onion. Boil 5 minutes. Add 2 tablespoons of vinegar and boil 5 minutes longer. Drop the fried fish into this mixture and continue boiling 10 minutes.

(Baños is the fish most commonly used for this recipe, although other fishes are sometimes used.)

ESCABECHE (MACAO)

- | | |
|---|--|
| 1 medium-sized fish (either lapu-lapu, pampano, apahap, or talakitok) | 2 tablespoons flour |
| 1 large onion | 2 cups water or white stock |
| 2 sections garlic, cut into small pieces | 4 tablespoons vinegar |
| 1 large red sweet pepper, cut into long, narrow pieces | 4 tablespoons sugar |
| | 3 tablespoons toyo sauce |
| | 2 fair-sized Irish potatoes, cut in very narrow strips 1 1/4 inches long |

Clean the fish, sprinkle with 1 teaspoon salt. Let stand 10 minutes. Drain and dry with a towel. Fry in lard until brown and lay aside.

Fry the garlic, onion, and sweet pepper in lard.

Make a medium-thick gravy from a mixture of water, vinegar, sugar, toyo, and flour; add the fried garlic, onion, sweet pepper, and fish; boil 5 minutes.

Place the fish on a platter, pour the gravy over it, and garnish with the potatoes fried crisp in deep fat.

MOLE

1 medium-sized dalag	4 tablespoons lard
2 tablespoons patis	¼ cup roasted peanuts, chop-
2 tablespoons roasted and pow-	ped very fine
dered rice	2 sections garlic, minced
1 tablespoon achuete seeds	2 pinches black pepper
2 cups water	

Soak the achuete seeds in 2 cups of water for about 15 minutes. Rub the seeds together and strain the liquid.

Clean the fish, cut into 4 or 5 pieces, and drain well.

Sauté the garlic until brown. Add the fish and patis at the same time. Cover the frying pan and cook 5 minutes. Add the powdered rice and finely chopped peanuts, previously mixed and moistened with 1 cup of achuete water. Cook 2 minutes longer. Then add the remaining achuete water and boil until the gravy thickens.

STUFFED BAÑGOS

1 bañgos	2 sections garlic, chopped
3 finely chopped tomatoes	very fine
3 potatoes, cut into small	1 teaspoon salt
cubes and fried	1 small can peas
1 finely chopped onion	

Clean the fish, taking care not to cut the skin. Roll the fish on the table, pressing on it to soften the meat. Carefully remove the meat and backbone with the aid of a dull table knife. The skin must remain unbroken. Boil the meat in a small quantity of water to which 2 pinches of salt have been added. Flake and remove all bones. Sauté the garlic, tomatoes, and onions. Add the flaked fish and cook for 5 minutes. Place the cooked mixture in a bowl. Add to it 1 tablespoon of butter, the peas well drained from their liquor, the previously fried potatoes, the well-beaten yolks of 3 eggs. Mix very thoroughly. Stuff the fish with this mixture and fry in very hot deep fat until brown, or bake in a moderate oven.

FISH FILLETS

Clean two soles and fillet. Sprinkle with salt and pepper.

Boil the heads and bones of the fish for 30 minutes in 2 cups of water, 1 sliced onion, 1 cup white wine, 1 tablespoon butter, and a small amount each of thyme, parsley, salt, and pepper. Strain the soup.

Bake the fillets for about 30 minutes in a pan containing 2 tablespoons butter and 1 cup of the soup. Drain, put the fillets on a platter, and add the drippings to the first soup.

Brown 1 tablespoon of flour in 1 tablespoon of butter. Then add all the soup gradually, stirring constantly. Boil until somewhat thick. Cool, and add the well-beaten yolks of 2 eggs, 2 tablespoons of butter, and cook again about 10 minutes. Pour this on the fillets.

Garnish with half-moon-shaped slices of bread dipped first in lightly beaten eggs, then in bread crumbs and fried until crisp.

STUFFED FISH FILLETS

1 cup flaked fish	1 egg
1 teaspoon bread crumbs	1 tablespoon melted butter
1 tablespoon cream	Pepper and salt to taste
Grated lemon rind	

Chop the fish and bread crumbs, add the pepper, salt, 2 pinches of grated lemon rind, melted butter, and the egg and cream previously beaten together. Mix thoroughly.

Roll the fillets and tie each with a piece of string to keep it rolled. Place in a greased pan with a small amount of broth made by boiling the heads, bones, and skin in water to which have been added tomato, onions, and salt. Bake in a moderate oven about 30 minutes, basting from time to time to prevent burning.

Remove the strings and roll in cracker crumbs. Pour over each $\frac{1}{2}$ teaspoon of melted butter, and serve with sauce made as follows:

1 tablespoon butter	A pinch each white pepper and
1 tablespoon flour	salt
$\frac{1}{2}$ pint milk	$\frac{1}{2}$ teaspoon lemon juice
1 teaspoon chopped parsley	

Brown the flour in butter, add the milk, lemon juice, salt,

and pepper, and cook until the gravy thickens. Add the chopped parsley just before removing from the fire.

FISH CROQUETTES

1 cup flaked fish	2 tablespoons butter
2 sections garlic, finely chopped	10 small potatoes boiled, peeled, and mashed
½ onion, finely chopped	2 eggs
¾ cup milk	6 tablespoons bread crumbs
1½ teaspoons salt	1 pinch black pepper
2 tablespoons chopped green onions	1 tablespoon flour

Sauté the garlic and onion in 2 tablespoons of lard. Add the fish, salt and black pepper, and cook for 5 minutes. Add the butter and green onion and mix well. Make oval croquettes with the mashed potatoes. Roll in lightly beaten eggs and then in bread crumbs, twice and fry in hot lard until brown.

(Dalagang bukid, navajita, and other fishes may be used for this recipe.)

PASTELITOS DE PESCADO

2 cups flour	1 tablespoon sugar
12 tablespoons butter	1 teaspoon salt
	4 eggs

Sift the flour, salt, and sugar. Work in the butter with tips of the fingers and fold in the well-beaten yolks of 4 eggs.

Sprinkle with enough cold water to bring the mass together, and work very lightly with the fingers. Place the dough on a floured board and roll out to a sheet about ⅛ inch thick. Cut into 2 equal parts. On one part spread evenly the filler, made as follows:

1 onion, chopped fine	3 Vienna sausages, chopped
2 tomatoes, roasted, skins and seeds removed, and minced	fine
	4 tablespoons grated cheese
	4 tablespoons chopped ham
	2 cups flaked fish

Sauté the onion and tomato in butter. Add the fish, sausage, and ham, and fry 3 minutes longer. Then add the grated cheese.

Cover with the other sheet of dough rolled out to ⅛ inch thick, and press gently with a rolling pin. Cut in rectangles 3 inches long and 1 inch wide.

Place in a buttered and floured pan; brush with lightly beaten yolks of eggs, and bake in a moderate oven until brown.

FISH PIE No. 1

2 cups flour	½ teaspoon salt
9 tablespoons butter	1 tablespoon sugar

Sift the flour, sugar, and salt. Mix in the butter with the aid of a fork until the mixture becomes mealy. Gradually add cold water until the dough clings together. Chill, and divide into two parts.

Roll out one part about ½ inch thick, on a floured board, transfer to a buttered pie pan and bake in a hot oven about 7 minutes.

Fill with the following filler.

8 tablespoons butter	1 cup mushrooms
1 small onion, chopped fine	2 cups flaked fish (lapu-lapu)
2 medium-sized tomatoes	1 cup water chestnuts (apulid), cut in small cubes
2 medium-sized Irish potatoes	

Boil the fish in water, salt, and a pinch of pepper. Flake and remove all bones. Soak the dried mushrooms in water until soft.

Fry the onions and tomatoes in butter. Add the apulid, mushrooms, fish, water chesnuts, the potatoes cut in small cubes and fried, a pinch of salt, and ½ cup white sauce.

Roll out the remaining dough to ½ inch thick, and use this as the top crust. Bake in a hot oven about 20 minutes.

FISH PIE No. 2

Prepare the dough in the same manner as in fish pie No. 1. Line muffin pans with this dough, rolled to ½ inch thickness. Bake until brown.

Fill with the following filler:

2 cups flaked fish previously boiled in water containing salt, pepper, 1 sliced tomato	6 tablespoons chopped sweet sour pickles 1 pint pastry cream
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Mix the above.

Roll out the remaining dough ½ inch thick and use as the top crust. Bake in a hot oven for about 10 minutes.

FISH TIMBALE

1 cup flaked fish	8 tablespoons butter
½ cup boiled mushrooms	1 teaspoon salt

1 cup bread crumbs
4 eggs

A pinch each pepper and nutmeg

2 cups milk

Use any good fish, such as lapu-lapu, pampano, talakitok, mayamaya, or bakoko. Remove the bones and skin. Flake. Pound the meat and mushrooms to a fine paste. Pass through a sieve.

Cook the bread crumbs for 10 minutes in the milk. Remove from the fire and add the fish paste, melted butter, salt, pepper, and nutmeg, and mix thoroughly. Add the well-beaten eggs and place the mixture in a buttered mold. Cover the mold with oiled paper, set in a deep baking pan containing hot water. Place in a moderate oven and bake for three-quarters of an hour.

Serve with tomato sauce.

FISH CUSTARD

1½ cups milk

4 tablespoons finely cut green

4 eggs

onions

½ cup flaked fish

½ teaspoon salt

¾ cup boiled, sliced shrimp

1 pinch black pepper

3 tablespoons chopped ham

Boil the fish and shrimp in a small amount of water with ½ teaspoon of salt and a pinch of black pepper.

Flake the fish and remove the bones. Clean the shrimps and slice into small pieces. Mix the fish and shrimp and add to the mixture the finely cut onions and chopped ham.

Beat the eggs well and mix thoroughly with the milk. Dissolve in this mixture 2 tablespoons of corn starch and add this to the fish mixture.

Transfer to a buttered mold and bake in a moderate oven until brown.

(Any fish may be used for this recipe.)

FISH-CHEESE PUDDING

1 cup flaked fish

1 cup boiled rice

2 cups coconut milk

3 eggs

4 tablespoons grated cheese

1 teaspoon salt

1 pinch pepper

2 tablespoons butter

Boil the fish in 1 cup of coconut milk. Flake, remove all bones, and add the butter.

Add the well-beaten yolks of eggs to 1 cup of coconut milk. then the boiled rice, the flaked fish, grated cheese, salt, and pepper. Fold in the stiffly beaten whites of 3 eggs.

Pour the mixture in a buttered mold and bake in a pan of hot water, in a moderate oven, for about 30 minutes.

FISH LOAF No. 1

1 cup flaked fish	1 small onion
2 minced sweet red pepper	½ cup chopped suet
2 cups coconut milk	½ cup bread crumbs
A pinch each pepper and nutmeg	1 teaspoon salt
	3 eggs

Cook the bread crumbs to a thick paste with 1 cup of coconut milk.

Boil the fish in 1 cup of coconut milk, flake, and remove all bones.

Fry the onion and fish. Season with salt, pepper, and nutmeg. Add the sweet red pepper, and cook 1 minute longer. Remove from the fire, add the paste, the minced suet, the well-beaten yolks of 3 eggs. Lastly fold in the stiffly whipped whites of 3 eggs. Transfer to a buttered bread pan and bake in a moderate oven until brown. (About 30 minutes.)

FISH LOAF No. 2

½ cup flaked fish	1 cup coconut milk
1 chopped sweet red pepper	3 eggs
¾ tablespoon salt	1 cup milk
½ cup bread crumbs	1 tablespoon lemon juice
	2 pinches paprika

Boil the fish in 1 cup of coconut milk and 1 teaspoon of salt. Flake and remove the bones. Add the bread crumbs, lemon juice, ¼ teaspoon salt, paprika, sweet red pepper, and the mixed well-beaten eggs and milk. Transfer to a buttered bread mold and bake 30 minutes in a moderate oven.

FISH SPREAD

1 medium-sized bañigos, dala-gang bukid, or navajita	Yolks of 2 eggs
2 cups coconut milk	¼ cups coconut cream
Juice of 6 calamansi	2 tablespoons white wine
¾ tablespoon salt	Pinch nutmeg
	Pinch pepper

Boil the fish in coconut milk to which has been added the calamansi juice, 1 teaspoon of salt, and a pinch of pepper. Flake

and remove all bones. Add 2 tablespoons white wine, a pinch of nutmeg, and cook 1 minute longer.

Add the 2 well-beaten egg yolks to the coconut cream and add this to the fish mixture. Cook until the mixture thickens.

Serve with a small amount of paprika on slices of toast, crackers, or biscuits.

BUYABES

1 onion cut in small pieces	1 cup white wine
1 section garlic, chopped	8 ounces tomato puree
3 leaves green onions, cut	4 cups water
2 tablespoons olive oil	1 gram saffron
A few parsley leaves	2 cups mollusk
1 laurel leaf	1 fish
1 celery leaf	1 teaspoon salt
Thyme	$\frac{1}{8}$ teaspoon pepper

Sauté the onion in the oil. Add the garlic, a few parsley leaves, 1 laurel leaf, a celery leaf, a small amount of thyme, and continue frying until the garlic is brown. Add 1 cup of white wine, 8 ounces of tomato puree, 4 cups water, salt, and pepper, and cook 5 minutes. Add 1 gram of saffron and boil 10 minutes; then the mollusks, previously cleaned and boiled in water until they open, the fish, previously cleaned and cut in pieces $\frac{1}{2}$ inch thick, and boil again for 15 minutes. Lastly, garnish with bread cut in small triangles and fry in oil until crisp.

(For mollusk use tulya, tekhan, halaang babae, or paros. For fish use lapu-lapu, mayamaya, pampano, bia, or bakoko.)

CHOW MIN

1 pound Chinese noodles	1 egg
$\frac{3}{4}$ cup sliced onions	2 tablespoons lard
$\frac{1}{2}$ cup pork, cut in thin, narrow slices $1\frac{1}{2}$ inches long	1 teaspoon cornstarch
1 cup shrimps, sliced in long narrow pieces	$1\frac{1}{2}$ cups chicken broth
	1 teaspoon salt
	Oil

Beat the egg and pour in a hot oiled pan. Run all over the surface of the pan and cook 1 minute. Cut in very narrow pieces, $1\frac{1}{2}$ inches long.

Mix the lard and noodles and steam for $\frac{1}{2}$ hour. Separate the noodles and fry in hot oil until brown. Place in a platter.

Season and sauté the onions, pork, and shrimps.

Make a medium-thick gravy from the chicken broth, toyo, cornstarch, salt, and pepper. Add the fried onions, shrimps, and pork, and pour the mixture over the fried noodles. Garnish with the fried eggs cut in long, narrow threads.

GOLDEN SHRIMP

Boil 20 medium-sized shrimps in a small quantity of water seasoned with salt and pepper.

Remove the heads and skins but not the tails.

Beat 4 eggs with 2 tablespoons of flour, a pinch each of salt and pepper. Dip the shrimps in the egg mixture. Fry in hot deep fat until brown.

Serve with sweet-sour sauce. See directions for making in Recipe No. 12.

STUFFED SHRIMPS

30 medium-sized shrimps	3 tablespoons water	chestnut,
6 tablespoons chopped pork	cut fine	
1 section garlic, chopped fine	1 tablespoon salt	
1 tablespoon minced onion	1 tablespoon flour	
2 tablespoons chopped tomatoes	1 tablespoon finely cut onion	
2 tablespoons minced mushrooms	leaves	
	2 tablespoons lard	
	2 eggs	

Blanch the shrimps in boiling water. Remove the shells from 20, leaving the heads and tails intact. Make a deep cut at the center of the back, in a straight line, from the head to the tail. Sprinkle with a pinch of pepper, salt, and a few drops of lemon juice.

Sauté the garlic, onion, and tomatoes in lard. Add the 10 remaining cleaned shrimps mixed with the pork and chopped fine, also the mushrooms and water chestnuts. Cook 5 minutes longer. Add the green onions and mix thoroughly.

Stuff the shrimps with the above mixture, wrap in a piece of omentum (unto sin sal), dip in 2 well-beaten eggs with 1 tablespoon flour, and fry in hot, deep fat until brown.

Serve with sweet-sour sauce made as follows:

½ cup vinegar	1 teaspoon salt
½ cup water	2 tablespoons cornstarch
2 tablespoons sugar	2 tablespoons toyo sauce

Mix the above ingredients and cook until the gravy thickens.

SHRIMP-AND-CRAB CAKE

1 cup boiled sliced shrimps	1 tablespoon salt
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1 cup boiled and flaked crabs	1 tablespoon chopped parsley
2 tablespoons butter	A few pinches pepper
1½ cups milk	A pinch nutmeg
Yolks of 2 eggs	1 teaspoon flour

Melt the butter in a sauce pan. Add the shrimps, crabs, salt, nutmeg, pepper, and parsley, then the milk previously mixed with flour and well-beaten yolks of 3 eggs.

Place in a buttered pan and bake in a moderate oven for 25 minutes.

Cool and cut in desired pieces. Fry in hot fat until brown. Serve hot.

CRAB-SHRIMP SHORT CAKE

Boil the shrimps and crabs in a small quantity of water with salt.

Cool, flake the crabs and slice the shrimps.

Fry for 5 minutes 3 tablespoons chopped onions and ½ cup each of the flaked crabs and sliced shrimps in a little fat.

Brown 2 tablespoons of seasoned flour in 2 tablespoons butter. Add gradually 2 cups of milk, stirring constantly. Boil to a thick gravy.

Make tea biscuits according to the following directions:

2 cups flour	1 tablespoon sugar
Yolks of 2 eggs	½ teaspoon salt
Milk	4 tablespoons butter
	4 teaspoons baking powder

Sift the flour, baking powder, salt, and sugar, and work in the butter with the tips of the fingers.

Beat the eggs and add enough milk to bring the total volume to ¾ cup. Add this to the flour mixture and knead very lightly.

Place on a floured board and roll out to ½ inch in thickness. Cut with a biscuit cutter and bake for 12 minutes in a hot oven (450°). Split the biscuits and fill with the shrimp-crab mixture, place on a platter, and pour the gravy over them just before serving.

STUFFED CRAB No. 1

1 cup boiled, flaked crabs	A pinch each pepper and cinnamon
½ cup bread crumbs	
1½ cups milk	2 tablespoons grated cheese

3 eggs
1 teaspoon salt

2 tablespoons butter
¼ cup suet

Boil the crabs in a few tablespoons of water and a small amount of salt. Flake.

Cook the bread crumbs in milk, add the butter, cheese, and flaked crabs, pepper, cinnamon, suet, and the 2 well-beaten eggs. Stuff the crab shells and brush the top with lightly beaten egg yolks. Bake about 20 minutes. Serve hot.

STUFFED CRAB No. 2

1 cup flaked crab	1 minced sweet red pepper
1 chopped onion	1 teaspoon salt
1 chopped tomato	2 eggs
1 section garlic, chopped fine	1 pinch pepper

Fry the garlic, onion, and tomato. Add the flaked crab, salt, pepper, sweet red pepper, and continue frying 5 minutes. Cool. Add the well-beaten eggs and stuff the crab shells with this mixture. Fry in hot fat until brown.

KEKIAM

1 cup ground pork	¼ cup green onion leaves,
1 cup ground pork fat	chopped fine
1 cup ground shrimps	½ cup flour
4 eggs, well beaten	¾ teaspoon salt

Mix the above ingredients and wrap in a piece of omentum (unto sin sal) to form a cylinder about 1½ inches in diameter. Steam for about 30 minutes. Cool, and slice crosswise to about the thickness of a 50-centavo piece, and fry in hot lard until brown.

Serve with vinegar to which has been added the chopped onions, a small amount of salt, a pinch of pepper, and a small amount of sugar.

CHOP-SUEY No. 1

1 cup flaked boiled chicken	3 cups cabbage, cut in pieces 1 inch long and ½ inch wide
1 cup boiled sliced shrimps	1 cup sliced patola
6 tablespoons sliced Chinese ham	6 tablespoons toyo
½ cup boiled and sliced chicken livers and gizzards	1 tablespoon flour
2 Chinese sausages	2 tablespoons chopped garlic
½ cup mushrooms	3 sliced onions
⅓ cup sliced pork	2 cups chicken broth
1 pig's kidney, boiled and sliced	1 cup ham broth
1 teaspoon salt	¼ teaspoon pepper

Sauté the garlic, onions, pork, shrimps, chicken, ham, sausages, livers, gizzards, kidney, and mushrooms together; then add the toyo, salt, pepper, and shrimp broth. Boil 5 minutes. Add the cabbage, boil 5 minutes longer; then the patola, and lastly the ham soup mixed with flour. Boil until the vegetables are tender. Stir while boiling to prevent burning.

Place in a deep dish and garnish with parsley leaves.

CHOP-SUEY No. 2

1 cup flaked boiled chicken	1 cup sprouted mongo (tau-gui)
1 cup sliced boiled shrimps	1 sliced carrot
6 tablespoons sliced Chinese ham	1 cup cabbage, cut in pieces $\frac{1}{2}$ inch long and $\frac{1}{2}$ inch wide
2 Chinese sausages	3 sliced onions
$\frac{1}{2}$ cup mushrooms	1 teaspoon salt
$\frac{1}{2}$ cup sliced pork	1 tablespoon flour
1 pig's kidney	$\frac{1}{4}$ teaspoon pepper
2 cups boiled and sliced chicken gizzards and livers	2 cups chicken broth
6 tablespoons toyo	1 cup ham broth
1 cup sliced celery	

Proceed as in chop-suey No. 1.

LUMPIA No. 1

1 cup shrimps, boiled, peeled, and cut fine	$1\frac{3}{4}$ cups grated inkama (sinkamas)
1 cup pork, boiled and sliced fine	$\frac{1}{4}$ cup toyo sauce
1 cup string beans, blanched $\frac{1}{2}$ inch long and cut in narrow pieces	4 tablespoons sugar
$2\frac{3}{4}$ cups grated green papaya	$1\frac{1}{2}$ teaspoons salt
1 onion, sliced fine	2 cups shrimp soup
	2 sections garlic, chopped fine

Boil the shrimps and pork in $2\frac{1}{2}$ cups of water.

Sauté the garlic and onion in lard, then the shrimps and pork. Add the toyo sauce, the shrimp broth (made by pounding the heads and tails of the shrimps, boiling them in the water in which they were cooked, and straining the soup), string beans, papaya previously worked with salt, washed and pressed to remove the water, sinkamas, salt, and sugar. Boil until the papaya and sinkamas are tender.

Remove from the fire and wrap about 2 tablespoons of the mixture in lumpia wrappings.

Spread on top of each a small quantity of pounded garlic and 1 teaspoon of lumpia sauce before serving. The sauce is made as follows:

½ cup toyo sauce	⅓ cup sugar
1½ cups water	4 tablespoons flour

Mix the toyo, water, sugar, and flour and boil to a thick gravy. Stir constantly while cooking to prevent lumping.

LUMPIA WITH COCONUT MILK (No. 2)

2 cups gabi stalks, cut ½ inch long	1½ teaspoons salt
1 cup pork, boiled and sliced fine	2 cups coconut milk
1 cup shrimps, boiled and sliced fine	2 sections chopped garlic
	1 minced onion
	Juice of 8 calamansi

Boil the pork and shrimps in 2 cups of coconut milk and 1 teaspoon salt. Save the soup, and cut the pork and shrimps into fine pieces.

Fry the garlic and onion, then the shrimps and pork. Add the gabi stalks which have previously been peeled, cut, and boiled in three changes of water and then boiled in the coconut milk in which the pork and shrimps were cooked. This is acidified with calamansi juice. Add ½ cup coconut milk and boil 10 minutes. Wrap in lumpia wrappings, and serve with finely chopped garlic and lumpia sauce. See lumpia No. 1.

SPAGHETTI NEST

Boil one package of spaghetti until tender in water containing salt and pepper. Drain well, add 4 tablespoons of grated cheese and 6 tablespoons of chicken broth and bake for 5 minutes in a moderate oven.

Boil a small fish in 1 cup of water containing 1 teaspoon salt, a pinch of pepper, ½ sliced onion, and 1 sliced tomato. Flake and remove all bones.

Cook ¼ cup bread crumbs in ½ cup coconut milk. Add ½ cup flaked fish, 1 minced sweet pepper, and 1 well-beaten egg. Form into small egg-shaped croquettes, roll in lightly beaten egg, then in bread crumbs, and fry until brown.

Arrange the spaghetti on a platter in the form of small nests and place 2 egg-shaped croquettes in each before serving.

Serve with tomato sauce or catchup.

FRIED-FISH NOODLES

1 cup uncooked flaked fish	½ cup crab soup made by
¼ cup flaked crabs or shrimps	pounding the legs of the
1 tablespoon minced onion	crabs and adding to this
2 pinches black pepper	a small quantity of water
1 teaspoon salt	and salt, boiling 5 min-
2 cups flour	utes, and straining the soup
Yolks of 2 eggs	through a piece of cloth

Pound the flaked crabs and fish together in a mortar until a very smooth paste is formed.

Mix the butter and flour thoroughly and add the yolks of 2 eggs. Add this to the pounded fish-crab mixture and knead, adding a small portion of the crab soup from time to time as needed, until the dough is smooth and elastic to the touch.

Place the dough on a floured board and roll to a very thin sheet. Cut in long, narrow pieces about $\frac{1}{2}$ inches long and $1\frac{1}{2}$ inches wide. Fry in hot fat until brown and crisp.

Serve with sweet-sour sauce made as follows:

2 tablespoons sugar	2 tablespoons butter
1 teaspoon salt	4 tablespoons sugar
2 tablespoons flour	4 tablespoons vinegar
2 cups white stock or water	¼ teaspoon black pepper

Brown the flour in butter and pour in the white stock gradually, stirring constantly. Add the vinegar, sugar, salt, and pepper, and cook until thick. Stir while cooking to prevent lumping.

PANSIT MOLO

2 cups flour	¼ teaspoon salt
Yolks 3 eggs	¼ cup water

Sift the flour and salt, add the yolks of 3 eggs, and knead with the fingers. Add the water and work until the dough becomes very smooth and fine. Roll out on a floured board to a thin sheet about the thickness of paper. Cut in small triangular pieces.

Prepare the following:

1 cup ground pork	2 tablespoons chopped kusay
5 tablespoons toyo	(Chinese leek)
Yolks 2 eggs	Pinch pepper

Mix the above ingredients and wrap in the dough, pressing the sides to seal them together, and to keep the stuffing in. Lay aside.

Prepare the soup as follows:

1 boiled chicken, cut in small pieces	1 tablespoon salt
1½ cups boiled, sliced shrimps	5 cups shrimp soup
2 tablespoons chopped garlic	10 cups chicken soup
8 tablespoons toyo	½ cup chopped kusay (Chinese leek)

Fry the garlic, onion, and shrimp. Add the chicken and fry about 8 minutes. Add the toyo and cook a few minutes longer. Then add the shrimp soup and chicken soup, and boil very slowly for about 1 hour.

When ready to serve drop the mixture wrapped in the dough in the soup and boil for 5 minutes. Serve hot.

PANSIT GUISADO

1 cup flaked boiled chicken	1 teaspoon salt
1 cup sliced pork	1 cup shrimp soup
¾ cup sliced boiled shrimps	1½ cups ham soup
⅔ cup Chinese sausages	1 tablespoon flour
1 cup cabbage, cut in long narrow pieces	6 cakes of mique (Chinese noodle)
1 cup patola	2 tablespoons chopped garlic
3 tablespoons toyo	1 sliced onion
4 tablespoons Chinese ham, shredded	Pinch pepper

Slice the pork, shrimps, and Chinese sausages in long narrow pieces.

Fry separately the garlic, onion, shrimps, pork, chicken, ham, and Chinese sausages. Lay a small portion of each aside for garnishing the dish. Mix the rest and add the toyo, salt, and pepper. Fry again for about 1 minute. Add the previously boiled shrimp soup, stirring constantly, then the flour mixed with a small amount of the soup, cabbage, patola, and ham soup. Boil until about dry. Add the mique, previously blanched in boiling water and fried 3 minutes in a small quantity of lard, and mix thoroughly.

Arrange on a platter and garnish with the fried garlic, onions, pork, chicken, shrimps, ham, and Chinese sausages. Sliced lemon and parsley leaves will also improve the appearance of the dish.

COUNTRY PANSIT

1 cup shredded dried fish	½ cup shrimps, boiled and sliced
1 cup fresh banana flowers, chopped fine	½ sliced onion
2 segments garlic	2 sliced ripe tomatoes
2 cups sotangjon (white noodles made of rice) soaked in water for about 10 minutes	4 leaves green onions
	2 cups shrimp soup
	1 teaspoon salt
	A few pinches black pepper

Fry the garlic, onion, tomatoes, dried fish, shrimps, and the banana flowers. Add the sotangjon, the shrimp soup, salt and pepper, and boil 10 minutes.

Place in a deep dish and garnish with minced green onion leaves.

PANSIT WITH SOUP

2 tablespoons chopped garlic	1 cup cabbage, sliced in long, narrow pieces
1 sliced onion	1 cup patola, sliced in small pieces
A pinch of pepper	3 tablespoons shredded Chinese ham
1 teaspoon salt	2 cups shrimp soup (made as in previous recipes)
1 cup flaked boiled chicken	1½ cups ham soup (made by boiling in water bones of Chinese ham)
1 cup pork, sliced fine	
¾ cup sliced boiled shrimps	
⅔ cup Chinese sausages, sliced in long, narrow pieces	
6 cakes of mique (Chinese noodle)	
	4 tablespoons toyo

Fry the garlic, onion, shrimps, pork, chicken, and sausages. Add the toyo, seasoning, and boiled shrimp soup. Boil 3 minutes. Stir to prevent burning. Add the patola and cabbage and continue boiling until the patola is half cooked. Add the ham soup and boil again, then the mique, which is first blanched in boiling water, drained, and fried for a few minutes in a small quantity of lard. Cook 5 minutes longer. Serve hot.

FISH-PINEAPPLE SALAD

1 cup flaked bañgos	3 bananas cut in small pieces
1 apple, cut into small cubes	½ cup coconut cream
2 mandarins, divided into sections and peeled	3 tablespoons sweet pickles
1 cup pineapple, cut into small cubes	3 tablespoons minced pili nuts
	1 teaspoon salt

Cut a pineapple crosswise 2 inches from the top. Remove all the meat, taking care not to break the skin.

Cook the bangos in a small amount of water, salt, and 1 cup sliced pineapple.

Drain, flake, and remove all bones. Add the mandarin, banana, pineapple, and coconut cream, and mix well.

Fill the pineapple with the mixture and replace the top. Chill before serving.

FISH-GUAVA SALAD

½ cup flaked fish	25 ripe guavas
1 orange	1 teaspoon salt
3 bananas	¼ cup coconut cream

Boil the fish in a small quantity of water, salt, and pepper. Drain and flake.

Pare 10 guavas, open, remove the seeds, and cut in small pieces. Peel the orange, divide into sections, and peel each section. Cut the bananas in small pieces.

Mix the flaked fish and the sliced fruits. Add the coconut cream and chill.

Cut the tops from 15 large, ripe guavas. Remove the seeds. Fill the guavas with the chilled mixture, replace the tops and serve while cold.

(Baños, dalagang bukid, navajita, and other inexpensive fishes may be used.)

FISH-VEGETABLE SALAD

1½ cups flaked fish, previously boiled in a small amount of water with pepper and salt	2 tablespoons minced onion
2 cups grated papaya, worked with salt, washed, and pressed to eliminate the excess of water and salt	4 tablespoons chopped green onions
1 cup boiled string beans, cut in thin slices	3 tablespoons minced carrots
2 tablespoons chopped sweet green pepper	3 tablespoons sugar beets cut in small cubes
	12 tablespoons mayonnaise dressing
	1 teaspoon mustard
	1 teaspoon salt
	Juice of 1 lemon

Mix the mustard, mayonnaise, salt, and lemon juice. Add the minced vegetables and chill. Serve on lettuce leaves.

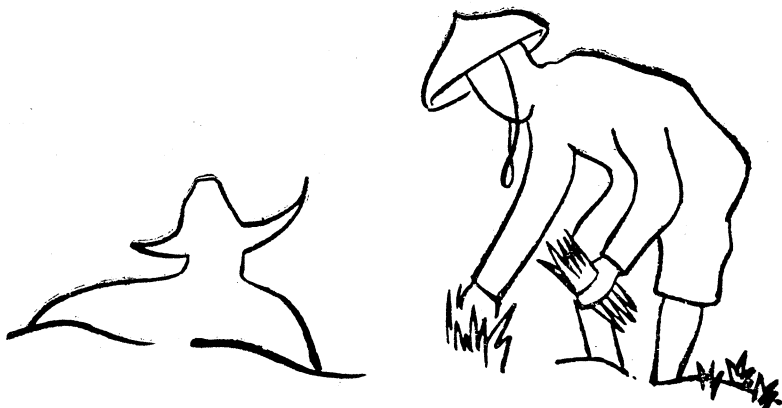
(Any fish may be used.)

Chapter VI

RICE BRAN: A HEALTH FOOD AND HOW TO COOK IT*

In the process of polishing rice the material known as rice bran,* or "darak," is removed from the rice kernel. This is also known as "tiki-tiki." Rice bran is commonly used as a cheap feed for pigs, chicken, horses, etc.

Years ago the Bureau of Science found that rice bran contained a substance, vitamin B, that prevented beri-beri. The Bureau of Science also originated an extract of "darak," or "tikitiki,"* which is used extensively for the cure of infantile beriberi. Rice bran is not only rich in the valuable vitamin B but



also has about 21 per cent fat, 12.5 per cent protein, and 45 per cent carbohydrates. It contains, therefore, excellent nutritive material and has a high calorific value. It is much richer in fat content than either wheat flour or rice, about as rich in protein as wheat flour, and much more so than rice. The Bureau of Science has found that fresh rice bran mixed

* Approximately 10% rice bran is generated in milling.

* Tiki-tiki is now available as a bottled extract under the same brand name. It is normally given to infants as a vitamin in varying dosages depending on age.

* A protein concentrate from rice bran found to be nutritionally superior in terms of its amino and fatty acids and mineral matter composition has already been successfully isolated and used in the enrichment of several food products. Zulueta and Patindol (1998) extracted a protein concentrate from rice bran of PsB Rc10 rice variety, which was added to a dry soup mix increased by 3.0% with the addition of 2.0% rice bran. The addition of rice bran protein concentrate did not cause any significant changes in the sensory attributes of the soup mix.

with wheat flour will make excellent muffins, hot cakes, cookies, crackers, etc. which taste very much like similar products made from graham flour. These rice-bran foods are not only highly proportion of half or more when mixed with wheat flour. The biscuits, crackers, etc., will be especially valuable for nourishing beriberi mothers whose children are likely to be infected. The darak should be used fresh or should be treated so that it will not become sour or rancid. The oil of ordinary rice bran contains a ferment that causes it to become rancid rather quickly. This ferment can be destroyed by heating the rice bran to 90° C., after which it has good keeping qualities. Rice bran, which is now practically a waste product, can be made the basis of a very profitable industry; it can furnish tasty, healthful, and very cheap food material for the Filipino people, and can take the place of much imported flour. It is estimated that more than these hundred thousand tons of rice bran are produced annually in the Philippines.*

In this bulletin, the term "darak" is used in the Tagalog sense and signifies the outer portion of the grain after the husk (ipa) has been removed.

In polishing, the embryo is usually "knocked" off and is included in the darak. The embryo and the outer part of the grain proper are the most nutritious parts of the rice and both are rich in protein, fat, and vitamins. The inner portion of the grain is composed largely of starch and is very deficient in Vitamin B so that a diet composed largely of polished rice often results in the disease known as beriberi.

Sometimes the husk (ipa) is ground in special machines and mixed with the darak as an adulterate. The pure and not the adulterated darak is recommended for human food.

TIKITIKI-MALAGKIT MUSH No. 1

½ cupful tikitiki flour	2 cupfuls coconut milk
½ cupful (malagkit) rice	1 cupful sugar
2 cupfuls water	½ teaspoonful salt

Mix the coconut milk, water, sugar, and salt, and bring to a boil. Strain through a piece of cloth, and place in a pan. Add the rice and tikitiki flour and boil until the rice is cooked. Serve with coconut cream and sugar.

TIKITIKI-MALAGKIT MUSH No. 2

½ cupful tikitiki flour	3 tablets of chocolate
½ cupful malagkit rice	2 cupfuls milk

* The average annual production of rough rice from 1985-1994 is 10.18 million metric tons. From this, 1.018 million metric tons of rice bran is produced.

2 cupfuls water

$\frac{1}{8}$ teaspoonful salt

1 cupful sugar

Mix the water and milk and dissolve the chocolate, sugar, and salt. Bring to a boil and strain. Place in a pan and add the rice and tikitiki flour and cook, stirring constantly, until the rice is soft and the mixture thick.

DARAK POTO

$\frac{1}{2}$ cupful tikitiki flour

6 teaspoonfuls baking powder

$1\frac{1}{2}$ cupfuls rice

1 cupful sugar

$\frac{3}{4}$ cupful coconut milk

Wash the rice, soak in water for a short time, and grind in a stone grinder. Let the flour settle to the bottom and drain off the water. Add coconut milk to the ground rice. Sift the tikitiki flour with the baking powder and sugar and mix well with the rice flour and coconut milk. Fill muffin pans nearly full of this mixture; cook in a pan of boiling water, or by steam. When cooked set in a pan of cold water for a few minutes. Remove the poto from the pan and serve with shredded coconut.

TIKITIKI BIBINGKA WITH GLUTINOUS RICE (Malagkit)

$\frac{1}{2}$ cupful tikitiki flour

1 coconut

1 cupful malagkit

$\frac{1}{2}$ teaspoonful salt

$1\frac{1}{4}$ cupfuls brown sugar

$\frac{1}{2}$ teaspoonful powdered anise

Grate the coconut. Extract the milk by pressing between the hands. Work it with $\frac{1}{2}$ cupful of water, and press again. Filter the milk, and set aside.

Extract the remaining juice of the coconut with 3 cupfuls of water, using 1 cupful in each extraction. Filter, add 1 cupful of brown sugar, bring to a boil, and filter again. Then add the malagkit rice, salt, and tikitiki flour, and cook in a pan until the rice is soft. Line a bibingka mold with banana leaf and fill with the rice mixture to $\frac{1}{2}$ inch thickness.

Dissolve the sugar ($\frac{1}{4}$ cupful) in the milk first extracted from the grated coconut. Add the powdered anise, and pour this over the rice-darak mixture. Cover the mold with a thin metal sheet and place red-hot charcoal underneath the mold and on top of the metal sheet, and cook until the top is brown.

If an oven is available, the boiled rice and tikitiki bran may be placed in a shallow dish, the coconut milk poured on top and the pan placed in the oven.

TIKITIKI-MALAGKIT KALAMAY NO. 1

½ cupful tikitiki flour	2 cupfuls coconut milk
1 cupful ground malagkit	1 cupful brown sugar

Mix the above ingredients in a pan, and cook over a moderate fire, stirring constantly, until the mixture becomes sticky and the rice very soft.

Line a plate with a piece of banana leaf, place the mush on it and sprinkle with a few tablespoonfuls of toasted grated coconut.

TIKITIKI-MALAGKIT KALAMAY No. 2

½ cupful tikitiki flour	1 teaspoonful vanilla
½ cupful ground malagkit	1 few pinches of salt
4 cupfuls water	2 tablespoonfuls butter or lard

½ cupful roasted linga

Boil the tikitiki flour and ground rice in water until the rice is soft. Add the salt, sugar, linga, and vanilla and cook until thick. Fry in a pan containing the hot butter or lard.

DARAK PALITAO No. 1

½ cupful tikitiki flour	½ teaspoonful salt
½ cupful ground malagkit	2 tablespoonfuls sugar

Wash the rice and soak overnight in plenty of cold water. Grind in a stone grinder. Place in a pan and let stand for a while undisturbed. Drain off as much water as possible by decanting it. Add the tikitiki flour and salt, and shape 1 tablespoonful portions of the mixture into long, flat, thin, tongue-like cakes. Drop in boiling water and cook until they rise and float on top. Remove from the boiling water and drop in cold water, then drain well. Cover with a mixture of equal proportions of finely shredded coconut, toasted linga, and sugar.

TIKITIKI PALITAO No. 2

½ cupful tikitiki flour	½ cupful coconut milk
½ cupful rice flour	2 green coconuts
½ cupful sugar	A pinch of salt

Sift the tikitiki flour, add to the wet rice flour, and mix well. (The rice flour may be made by soaking the rice overnight and grinding it in a stone grinder.) Add the salt, and knead the dough. Shape 1 tablespoonful portions into thin, long, tongue-like cakes. Drop in boiling water and remove when they rise and float on top. Set aside to drain.

Boil the coconut milk with sugar, and when thick add the finely grated green coconut, then the drained palitao, and cook 3 minutes.

PININDOT WITH BANANA AND SWEET POTATO

½ cupful tikitiki flour	1 medium-sized sweet potato, cut into small cubes
½ cupful wheat flour	1 cupful coconut milk
2 pinches of salt	2 cupfuls water
2 ripe saba bananas, cut to small cubes	⅓ cupful sugar

Sift the tikitiki flour, wheat flour, a pinch of salt, and 2 tablespoonfuls sugar, twice. Add just enough water to form a soft dough. Form into small balls, and drop these into the mixture of coconut milk and water brought to a boil. When the balls float, add the sweet potato, banana cubes, and then the sago. Boil until the potato and banana are tender. Sweeten with the rest of the sugar, add a pinch of salt, and just before serving add the coconut cream.

TIKITIKI FRITTERS NO. 1 (Maduya)

¼ cupful coconut cream	1 tablespoonful sago
½ cupful tikitiki flour	3 tablespoonfuls sugar
¼ cupful wheat flour	1 egg
½ teaspoonful baking powder	1/6 cupful milk
A pinch of salt	½ cupful shredded green coconut

Beat the egg. Add the sugar, milk, and the flour, previously sifted with salt and baking powder. Mix thoroughly. Then add the shredded coconut. Drop 1 teaspoonful portions in hot deep fat, and fry until brown. Serve with thick syrup.

TIKITIKI FRITTERS NO. 2

½ cupful tikitiki flour	½ teaspoonful vanilla
½ cupful wheat flour	1 egg
1½ teaspoonfuls baking powder	⅓ cupful soy-bean milk
2 pinches of salt	¼ cupful sugar

Sift the flours, baking powder, and salt, twice. Dissolve the sugar in milk. Gradually add to this the dry ingredients, and mix thoroughly. Then add the lightly beaten egg and vanilla. Drop by spoonfuls in hot, deep fat and fry until brown. Roll in sugar after draining of excess fat.

DARAK-BANANA FRITTERS

½ cupful tikitiki flour	¾ cupful milk
½ cupful flour	2 tablespoonfuls sugar
5 ripe saba bananas	1 tablespoonful lemon juice
1½ teaspoonfuls baking powder	¼ teaspoonful salt
1 egg	

Sift the dry ingredients together, except the sugar; and the beaten egg and milk and beat until smooth. Peel the bananas and cut them into thin slices, lengthwise. Sprinkle sugar and lemon juice over the sliced bananas. Dip each slice in the batter, and fry in deep, hot fat until brown. Drain off excess fat and sprinkle with sugar (powdered sugar is best).

TIKITIKI ESPASOL

½ cupful tikitiki flour	1 cupful sugar
½ cupful roasted malagkit ground to a fine flour	½ cupful evaporated milk
	½ cupful coconut milk
A pinch of ground anise seed	

Roast the darak flour and sift it with the rice flour. Add the coconut milk and mix thoroughly. Boil the sugar and milk, add the mixture of flours and coconut milk, and boil until thick. Lastly add the ground anise seed, and cook a few minutes longer. Place on a board covered with toasted malagkit rice flour, pat, roll to ¼ inch thickness, and cut to desired pieces. Roll in toasted rice flour (malagkit) and keep in a closed container.

TIKITIKI GOLLORIA

½ cupful tikitiki flour	2 egg yolks
½ cupful wheat flour	1 teaspoonful sugar
½ teaspoonful baking powder	Water enough to moisten
1½ tablespoonfuls butter	

Sift the dry ingredients (tikitiki flour, wheat flour, baking powder, and sugar) twice.

Work in the butter with the tips of the fingers. Add the egg yolks and mix thoroughly with enough water to form a soft dough. Transfer the dough to a floured board and knead until a fine, smooth dough is obtained. Roll out to a thick sheet and cut into small pieces 1¼ inches long and ½ inch wide. Lift on a fork and fold over to bring the two ends together. Fry in deep, hot fat until brown. Make a syrup of 3 parts sugar to 1 part water and, while boiling, drop in the fried golloria. Continue boiling over a slow fire, stirring con-

stantly, until the fried dough is covered with a thin coating of sugar. Cool and keep in a well-closed container.

TIKITIKI OKOY

¼ cupful tikitiki flour	½ cupful sliced shrimps
¼ cupful cornstarch	½ cupful sprouted mungo beans (taugui)
1 teaspoonful salt	1 head sliced garlic
1 teaspoonful baking powder	1 tablespoonful green onion cut to fine pieces
1½ cupful shrimp soup	
1 egg	

Mix the tikitiki flour, cornstarch, salt, and baking powder and sift twice. Add the shrimp juice, the well-beaten egg, the green onion, and mungo-bean sprouts. Drop small amounts in deep, hot fat to fry. When the flakes are half cooked, place on each portion a few slices of sliced shrimps and garlic, and continue frying until brown. Serve with vinegar and a small amount of garlic, chopped fine.

TIKITIKI MASAPODRIDA No. 1

¼ cupful tikitiki flour	⅛ cupful shortening
¼ cupful wheat flour	½ teaspoonful salt
⅛ cupful sugar	2 egg yolks

Sift the flours and salt twice and work in the shortening. Beat the egg yolks, add the sugar, and continue beating until thick. Gradually add the egg mixture to the flour and knead. A small amount of water may be added, if necessary. Place on a floured board. Pat and roll out to ¼ inch thickness. Cut with a biscuit cutter, brush each piece with egg yolk, and sprinkle over it a few grains of sugar. Bake in a hot oven until brown.

TIKITIKI MASAPODRIDA No. 2

½ cupful tikitiki flour	6 tablespoonfuls sugar
½ cupful wheat flour	6 tablespoonfuls butter or short- ening

Brown the tikitiki and wheat flour in an oven. Add the sugar and sift twice. Work in the shortening with the finger tips. Add just enough water to make the dough cling together. Mold to desired shape, place on a baking sheet, and bake from 5 to 10 minutes.

TIKITIKI PASTE

1 cupful tikitiki flour ½ cupful sugar
½ cupful soy-bean milk or milk Vanilla or grated orange peel

Mix the above ingredients and cook in a shallow, wide pan until it forms a solid mass that no longer sticks to the fingers. Add the flavoring and mix well.

Toss on a board covered with sugar, roll out to ¼ inch thickness and cut to desired pieces. Roll in sugar and wrap in candy wrappers.

TIKITIKI-SWEET-POTATO CROQUETES

½ cupful tikitiki flour 6 tablespoonfuls sugar
½ cupful malagkit 1 medium-sized camote

Sift the tikitiki flour and add to it the freshly ground malagkit. The rice is first soaked in water and then ground between 2 flat stones. The flour-water mixture is allowed to stand. The flour settles to the bottom, with the water on top. The water may be carefully poured out of the container by decantation. Add 3 tablespoonfuls sugar and knead well.

Boil the sweet potato mash and add 3 tablespoonfuls sugar.

Make little balls of this dough, flatten them to small, thin circles and fill with sweet potato filler. Fold over to close the opening, flatten the croquettes, and fry in hot, deep fat until brown.

TIKITIKI SOY-BEAN FRIED COOKIES

¾ cupful tikitiki flour 2 tablespoonfuls shortening
¼ cupful soy-bean flour 2 eggs
¼ cupful wheat flour A pinch of salt
2 tablespoonfuls sugar 1 tablespoonful water

Sift the flours with the salt and work in the shortening. Beat the eggs and add the water and sugar. Gradually add this to the flour and knead well. A small amount of flour may be added while kneading, if necessary. Roll out to a very thin sheet, as thin as can be made. Cut in rectangles 4 inches long and ¾ inch thick. Cut an opening at the middle and make a bow by inserting the two ends through the hole. Fry in deep, hot fat until brown, and drain off excess fat. Then roll in powdered sugar.

TIKITIKI BALLS

1/3 cupful tikitiki flour	1/2 cupful roasted peanuts, chopped
1/3 cupful malagkit	very fine
1/8 cupful evaporated milk	1/4 cupful sugar

Soak the rice overnight and grind in a stone grinder. Let stand and drain off as much water as possible. Add to the wet flour the tikitiki flour, 1/4 cupful chopped peanuts, 1/8 cupful sugar, and enough milk to permit the mixture being formed into little balls. Drop these in boiling water and when the balls float take them from the boiling water and drain. Roll in the mixture of the remaining sugar and chopped peanuts.

TIKITIKI EMPANADITAS

1/2 cupful tikitiki flour	2 egg yolks
1/2 cupful wheat flour	Roselle jam
3 tablespoonfuls butter	Water, enough to moisten

Sift the flours and work in the butter. Add the egg yolks and mix thoroughly. Add enough cold water to make a thick dough, knead, and roll out to a thin sheet. Cut in small circles. Fill one side of the circle with 1 teaspoonful of roselle jam, fold over the other side and bring the edges together. Press the sides down with the tip of fork, and fry in hot, deep fat until brown.

TIKITIKI BUNUELOS

1/4 cupful tikitiki flour	2 egg yolks
1/4 cupful wheat flour	1/2 cupful water
1 tablespoonful butter or lard	1/8 teaspoonful salt

Boil the water, salt, and butter. Add the sifted flour and remove from the fire. Stir with a wooden spoon. Then add the egg yolks and mix thoroughly. Drop by teaspoonfuls in hot deep fat and fry until brown. Serve with thick syrup.

TIKITIKI PUDDING

1/4 cupful tikitiki flour	1 cupful milk
1/2 cupful boiling water	2 eggs
2 tablespoonfuls sugar	A pinch of salt
1 small package of seedless raisins	A pinch of cinnamon

Cook the tikitiki flour and salt in water for 10 minutes. Strain through a piece of sinamay. Beat the eggs lightly in a pan. Add the sugar and milk, and mix thoroughly. Stir in the cooked tikitiki flour and mix to a thin, smooth paste. Add the cinnamon and pour in a pan lined with thick caramelized

syrup; cook in boiling water until it reaches the consistency of custard. Place in an oven to brown the top, or use a sheet of metal with live charcoal over it, as in Tikitiki Custard.

TIKITIKI CUSTARD

¼ cupful tikitiki flour	½ cupful soy-bean milk
½ cupful milk	¼ cupful sugar
3 egg yolks	1 teaspoonful grated lime peel

Beat the egg yolks with sugar. Add the milk, soy-bean milk, the grated lime peel and mix thoroughly. Add the tikitiki flour and beat well until smooth. Line a mold with a thick caramelized syrup and when the syrup has dried out, pour in the mixture. Place the mold in a pan of boiling water and cook until the pudding solidifies. Brown the top by placing the mold in the oven or by placing a piece of sheet metal on top and covering it with live charcoal.

TIKITIKI BISCUITS NO. 1

½ cupful tikitiki flour	2 tablespoonfuls shortening
½ cupful flour	½ cupful milk
2½ teaspoonfuls baking powder	½ teaspoonful salt

Mix the dry ingredients and sift 3 times. Work in the shortening, and add the milk. Roll out to ⅓ to ½ inch thickness and cut with a biscuit cutter. Do not knead. Place on an oiled baking sheet, brush the top with white of egg and water, mixed, and bake in a moderate oven from 12 to 15 minutes.

TIKITIKI BISCUITS NO. 2

½ cupful tikitiki flour	1 tablespoonful sugar
½ cupful flour	2 egg yolks
2 teaspoonfuls baking powder	4 tablespoonfuls butter or shortening
Enough milk to make ½ cupful with the egg yolk	¼ teaspoonful salt

Mix the dry ingredients and sift three times. Work in the butter and add the well-beaten yolk and milk. Do not knead. Place on a buttered baking sheet, sprinkle flour over it, and roll out to ⅓ to ½ inch thickness. Brush the top with egg yolk. Bake in a moderate oven from 12 to 15 minutes.

TIKITIKI KUNDOL BISCUITS

½ cupful tikitiki flour	2 tablespoonfuls shortening
½ cupful flour	⅓ cupful finely chopped candied kundol
2½ teaspoonfuls baking powder	2/3 cupful milk
½ teaspoonful salt	

Sift the flours, salt, and baking powder three times. Work in the shortening. Add the milk and chopped kundol, and toss on a floured board. Pat and roll out to $\frac{1}{4}$ inch thickness. Place on a well-greased baking sheet and brush the top with a mixture of egg white and a small amount of water. Bake in a moderate oven for 12 to 15 minutes.

TIKITIKI CRISP BISCUITS

$\frac{1}{2}$ cupful tikitiki flour	1 egg yolk
$\frac{1}{2}$ cupful flour	1 teaspoonful butter
$\frac{1}{8}$ teaspoonful salt	Milk, enough to moisten
1 teaspoonful sugar	

Sift the dry ingredients three times. Work in the butter with the finger tips. Add the egg yolk and enough milk to make a stiff dough. Knead until smooth. Roll out on a floured board to a very thin sheet. Cut with a biscuit cutter, prick with a fork, brush with egg white and water, and bake in a slow oven for from 12 to 15 minutes, or until brown and crisp.

TIKITIKI CRACKERS

$\frac{1}{2}$ cupful tikitiki flour	$\frac{1}{4}$ teaspoonful salt
$\frac{1}{2}$ cupful flour	1 teaspoonful sugar
$\frac{1}{2}$ cupful butter or shortening	Milk, enough to moisten (a few tablespoonfuls)
1 teaspoonful baking powder	

Mix the dry ingredients and sift twice. Work in the butter with the finger tips. Add enough milk to make a stiff dough. Place on a floured board and knead lightly. Roll out to $\frac{1}{6}$ inch thickness and cut with a biscuit cutter dipped in flour. Place on a buttered sheet and bake in a hot oven for about 10 minutes.

TIKITIKI RICH COOKIES

$\frac{1}{2}$ cupful tikitiki flour	$\frac{1}{3}$ cupful sugar
$\frac{1}{2}$ cupful flour	1 egg well beaten
$\frac{1}{2}$ cupful butter	$\frac{1}{2}$ grated lime rind

Cream the butter; gradually add the sugar, well-beaten egg, flour, and grated lime rind. Spread thinly on a buttered sheet, 2 inches apart, 1 teaspoonful portions of the cookie dough. Bake in a moderate oven until brown.

Pili nuts, raisins, or sliced candied fruits may be placed on each cookie before baking.

TIKITIKI SUGAR COOKIES

½ cupful tikitiki flour	⅓ cupful shortening
½ cupful flour	1 egg
⅓ cupful sugar	1/9 cupful milk
⅓ teaspoonful baking powder	½ teaspoonful vanilla extract
⅓ teaspoonful salt	

Cream the shortening. Mix well with the sugar; add gradually the beaten egg and the flours, sifted 3 times with the salt and baking powder, alternating with the milk. Add the vanilla. Roll out thin, cut to desired shape, and sprinkle with sugar. Bake in a moderate oven until brown.

TIKITIKI COCONUT COOKIES

½ cupful tikitiki flour	1 egg
½ cupful flour	1/6 cupful grated coconut, partially dried
1 teaspoonful baking powder	
⅓ teaspoonful salt	⅓ cupful sugar
⅓ cupful thick cream	

Beat the egg until light; add the sugar, coconut, cream, and the flours, previously sifted with salt and baking powder. Chill. Place on a floured board and roll out to ½ thickness. Sprinkle with coconut; roll out to ¼ inch thickness and cut out with a round cutter. Bake on a buttered sheet, in a moderate oven, until brown.

TIKITIKI IMPERIAL COOKIES

¾ cupful tikitiki flour	⅓ cupful butter
¾ cupful flour	½ cupful sugar
¾ teaspoonful baking powder	1 egg
¼ teaspoonful grated nutmeg	1 tablespoonful milk
¼ teaspoonful salt	⅓ teaspoonful extract of lemon

Cream the butter and sugar. Add the well-beaten egg, milk and lemon extract. Sift the dry ingredients and add to the first mixture. Place on a floured board and chill. Roll out as thinly as possible and cut out with a desired cutter. Place on a buttered sheet and bake in a moderate oven from 8 to 10 minutes.

TIKITIKI DOUGHNUTS No. 1

¾ cupful tikitiki flour	2 eggs
1 cupful flour	⅓ cupful milk
2 teaspoonfuls baking powder	½ teaspoonful salt
½ cupful sugar	⅓ teaspoonful, each, of ground cinnamon and nutmeg
1½ tablespoonfuls butter	

Cream the butter, and add $\frac{1}{4}$ cupful sugar. Add the remaining sugar to the lightly beaten eggs, and add this to the creamed butter and sugar. Add the mixture of flours sifted with salt, baking powder, and spices, and more flour if necessary to make a dough stiff enough to roll. Place on a floured board, knead very lightly, pat, and roll out to $\frac{1}{4}$ inch thickness. Cut with a doughnut cutter, fry in deep, hot fat until brown, drain, and roll in sugar.

TIKITIKI DOUGHNUTS No. 2

1 cupful tikitiki flour	$\frac{1}{2}$ teaspoonful salt
1 cupful flour	$\frac{1}{3}$ cupful sugar
$2\frac{1}{2}$ teaspoonfuls baking powder	$1\frac{1}{2}$ tablespoonfuls shortening
1 pinch of each: cinnamon, clove, mace	1 egg $\frac{1}{3}$ cupful milk

Sift the flours with salt, baking powder, and spices three times.

Cream the shortening and sugar. Add the well-beaten egg and milk and mix well. Then add the flour and mix well. Add more flour to make a stiff enough dough to roll. Place on a floured board and knead lightly. Pat and roll out to $\frac{1}{3}$ inch thickness and cut with a doughnut cutter. Fry in deep, hot fat until brown. Drain, and roll in powdered or granulated sugar.

TIKITIKI DOUGHNUTS No. 3 (Without Shortening)

1 cupful tikitiki flour	$\frac{1}{2}$ teaspoonful salt
1 cupful flour	$\frac{1}{4}$ teaspoonful grated nutmeg
$\frac{1}{2}$ cupful sugar	1 egg
1 teaspoonful cream of tartar	$\frac{3}{8}$ cupful milk
$\frac{1}{2}$ teaspoonful baking soda	

Mix the dry ingredients and sift three times. Add the well-beaten egg and milk, and knead very lightly. Place on a floured board and roll out to $\frac{1}{4}$ inch thickness. Fry in hot, deep fat until brown. Drain and roll in sugar.

TIKITIKI MUFFINS No. 1

$1\frac{1}{4}$ cupfuls tikitiki flour	$\frac{3}{4}$ teaspoonful soda
1 cupful flour	1 teaspoonful salt
1 cupful sour milk	2 tablespoonfuls butter
$\frac{1}{3}$ cupful molasses	

Mix the dry ingredients and sift three times. Mix thoroughly the molasses and milk, and add this to the dry ingre-

dients. Lastly add the butter. Fill well-greased muffin pans, and bake in a moderate oven for about 20 minutes.

TIKITIKI MUFFINS No. 2

1 cupful tikitiki flour	¼ cupful sugar
¾ cupful flour	2 eggs
4 teaspoonfuls baking powder	1 cupful milk
½ teaspoonful salt	3 tablespoonfuls melted butter

Mix the dry ingredients and sift three times. Add gradually the well-beaten eggs, milk, and melted butter. Fill well-greased muffin pans and bake in a moderate oven from 20 to 25 minutes.

TIKITIKI MUFFINS No. 3

¾ cupful tikitiki flour	2 tablespoonfuls sugar
¾ cupful flour	1 egg
3 teaspoonfuls baking powder	¾ cupful milk
½ teaspoonful salt	1 tablespoonful melted butter

Mix the dry ingredients and sift three times. Add the milk gradually, then the well-beaten egg, and the melted butter. Fill buttered muffin pans and bake in a moderate oven from 20 to 25 minutes.

TIKITIKI HOT CAKES NO. 1

½ cupful tikitiki flour	1 tablespoonful sugar
½ cupful flour	2 eggs
3 tablespoonfuls baking powder	1 tablespoonful melted butter
¼ teaspoonful salt	½ cupful milk, or more

Mix the dry ingredients and sift twice. Beat the eggs and beat the milk into them. Add this mixture gradually to the dry ingredients. Then add the butter. Drop by spoonfuls on a greased pan or griddle. Cook on one side until puffed and full of bubbles. Turn over and cook the other side. Serve hot with butter and syrup (usually maple syrup).

TIKITIKI HOT CAKES No. 2

1¼ cupfuls tikitiki flour	½ teaspoonful salt
1 cupful flour	2 cupfuls sour milk
1 egg	1¼ teaspoonfuls baking soda

Sift flours, salt, and soda. Gradually add the sour milk and the well-beaten egg.

Cook as in Tikitiki Hot Cakes No. 1.

TIKITIKI HOT WAFFERS

¾ cupful tikitiki flour	1 tablespoonful sugar
¾ cupful flour	2 eggs
½ teaspoonful salt	1 cupful milk
3 teaspoonfuls baking powder	1 tablespoonful melted butter

Mix the dry ingredients and sift three times. Add the milk gradually, the well-beaten eggs, and the melted butter. Pour in hot waffle iron and cook until both sides are brown. Serve with butter and syrup.

TIKITIKI CREAM WAFFERS

½ cupful tikitiki flour	1 tablespoonful sugar
½ cupful flour	1 cupful cream
3 teaspoonfuls baking powder	2 eggs
½ teaspoonful salt	

Beat the egg whites and yolks separately, and mix the beaten yolks into the cream. Sift the dry ingredients and gradually add this to the beaten egg yolks and cream. Fold in the egg whites, beaten stiff, and bake in a hot waffle iron until brown. Serve with butter and syrup.

TIKITIKI COCONUT ROLL

¼ cupful tikitiki flour	⅓ teaspoonful salt
¼ cupful flour	2 tablespoonfuls cornstarch
1 teaspoonful baking powder	Juice of 1 calamansi
½ cupful sugar	1 teaspoonful grated mandarin or lime rind
3 eggs	
1 tablespoonful water	

Mix and sift three times, both kinds of flour, cornstarch, baking powder, and salt. Beat the egg yolks until thick and lemon colored. Gradually add the sugar, beating constantly while adding. Add the calamansi juice, water, and ½ teaspoonful of grated mandarin peel. Add the flour mixture gradually from the sifter. Fold in the egg whites beaten stiff, to which has been added ½ teaspoonful of the grated mandarin rind. Pour the batter in a rectangular shallow pan and bake in a moderate oven about 12 minutes. Take out of the Pan while hot and place on a piece of paper. Spread with coconut preserve. This is made by shedding green coconut and adding for each cupful of coconut 1 cupful of sugar and ¼ teaspoonful vanilla. Cook until it becomes very thick and color pink with certified food coloring. Roll the cake while hot. Cut crosswise to ¼ inch thickness before serving.

TIKITIKI MANGO ROLL

$\frac{1}{2}$ cupful tikitiki flour	1 tablespoonful milk
$\frac{1}{2}$ cupful flour	$\frac{1}{2}$ teaspoonful milk
1 teaspoonful baking powder	$\frac{3}{4}$ cupful sugar
3 eggs	

Sift the flours and baking powder three times. Beat the eggs until very light. Add the milk and sugar and beat until creamy. Lightly stir in the flour mixture, and lastly the vanilla. Pour the batter in a shallow, rectangular cake pan and bake in a moderate oven for about 10 minutes. Take out of the pan while hot, turn out upside down on a sugared paper and spread with warm mango jam. Roll up firmly. Cut crosswise into $\frac{1}{4}$ inch thick pieces before serving.

Other similar rolls may be made using ube jam, guava butter, guava jelly, and other jams, jellies, and fruit butters made from native and foreign fruits.

TIKITIKI PLAIN CAKE

$\frac{3}{4}$ cupful tikitiki flour	$\frac{3}{4}$ cupful sugar
$\frac{3}{4}$ cupful flour	$\frac{1}{3}$ cupful butter or shortening
2 teaspoonfuls baking powder	1 teaspoonful vanilla
$\frac{1}{8}$ teaspoonful salt	2 eggs
$\frac{3}{8}$ cupful milk	

Sift the flours with baking powder and salt. Cream the butter and sugar; add the well-beaten yolks of the eggs and vanilla. Beat until creamy. Add alternately the flour mixture, and the milk. Fold in the well-beaten whites of the eggs. Bake in buttered layer-cake pans. Any jam, jelly, or frosting may be used.

DARAK SPONGE CAKE

$\frac{1}{2}$ cupful tikitiki flour	4 eggs
$\frac{1}{2}$ cupful flour	1 cupful sugar
$\frac{1}{4}$ teaspoon salt	4 teaspoonfuls lemon juice

Sift the flours with the salt. Separate the whites and yolks of the eggs and beat the yolks until thick and lemon colored. Add the sugar gradually and beat again. Add the lemon juice and mix thoroughly. Fold in the flour, alternately with the stiffly beaten egg whites. (Be careful not to beat the cake at this stage.) Bake in a floured loaf tin in a slow oven for about 40 minutes.

(DARAK HOT-WATER SPONGE CAKE

½ cupful tikitiki flour	¾ cupful sugar
½ cupful flour	2 eggs
1½ teaspoonfuls baking powder	½ cupful hot water
⅛ teaspoonful salt	1 teaspoonful lime juice

Beat the egg yolks until thick. Add ½ of the sugar and beat until creamy. Then add the water and lime juice and beat again. Add the other half of the sugar to the whites beaten until frothy, and beat until stiff. To the beaten yolks add the flour little by little and fold this mixture into the whites. Bake in a pan lined with greased paper.

TIKITIKI SPONGE CAKE WITH COCOA

½ cupful tikitiki flour	2 tablespoonfuls cocoa
½ cupful flour	¼ teaspoonful salt
4 eggs	1 teaspoonful vanilla
1 cupful sugar	

Sift the flour, salt, and cocoa. Beat separately the egg whites and yolks. Beat the yolks until thick and lemon colored. Add the vanilla; gradually add the sugar and beat again. Fold in carefully the flour alternately with the stiffly beaten egg whites. Bake in a floured sheet or loaf tin and bake in a slow oven, from 40 to 60 minutes.

TIKITIKI SOY CAKE

¾ cupful tikitiki flour	¼ cupful soy milk
¾ cupful flour	½ cupful sugar
1½ teaspoonfuls baking powder	2 eggs
½ teaspoonful cinnamon	¼ cupful shortening (butter)

Cream shortening; add the sugar, and cream again; add the egg yolks and beat well. Add the flours, sifted with baking powder and cinnamon alternately with soy-bean milk, and fold in the beaten whites of eggs. Bake in a greased pan, in a moderate oven, for about 35 minutes.

TIKITIKI COCOA CAKE

1 cupful tikitiki flour	2 egg yolks
1 cupful flour	1½ cupfuls sugar
½ teaspoonful salt	½ cupful shortening
2 teaspoonfuls baking powder	½ cupful boiling water
¼ cupful cocoa	1 teaspoonful vanilla
1 cupful milk	

Cream the shortening and gradually add the sugar, beating continuously. Beat in the egg yolks. Add the milk and the flour sifted with salt and baking powder. Make a thin paste of cocoa and a little water, and add the boiling water. Add this to the batter. Lastly, add the vanilla. Bake in a greased pan in a moderate oven.

TIKITIKI ANGEL CAKE

3/8 cupful tikitiki flour	1 teaspoonful cream of tartar
1/2 cupful flour	1/3 teaspoonful salt
9 egg whites	1 teaspoonful vanilla
1 cupful sugar	

Sift the flours and salt three times. Sift the sugar separately two times.

Beat whites of eggs to a froth. Add the cream of tartar and beat until the eggs are stiff but not dry. Gradually add the sugar, beating after each addition. Fold in the flour and lastly add the vanilla. Bake it in ungreased pan, in a slow oven from 60 to 75 minutes. Do not disturb while baking.

DARAK TOASTED POUND CAKE

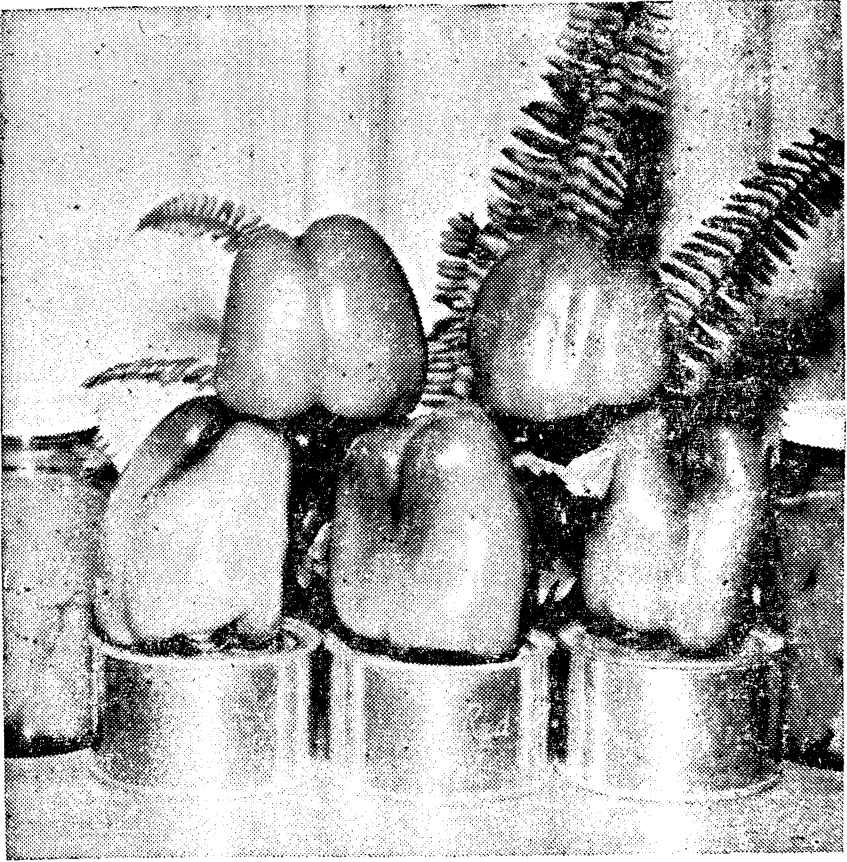
1 cupful tikitiki flour	1 2/3 cupfuls sugar
1 cupful flour	5 eggs
1 cupful butter	

Work butter until creamy. Gradually add the sugar while beating constantly; then add eggs one at a time, beating vigorously between the addition of each. When the mixture is of a creamy consistency, fold in the flour, and turn into a buttered and floured bread pan. Bake one hour in a slow oven. Cool, slice crosswise to 1/4 inch thickness, and toast until brown.

TIKITIKI MAMON

1/2 cupful tikitiki flour	18 egg yolks
1/2 cupful flour	3/4 cupful sugar
3/4 cupful melted butter	

Beat the egg yolks until thick and lemon colored. Gradually add the sugar, beating while adding, until the mixture becomes creamy. Add the flour gradually and then the melted butter. Bake in a moderate oven.



Vegetable Canning: The canning of pimientos (red peppers) like any other vegetable or fruit raised at home or bought cheap while in season was initiated through the Rural Improvement Clubs Organized by the founder of Home Extension Work in the Philippines, Maria Y. Orosa.

Miss Orosa exemplified the finest traditions of Filipino womanhood — having surmounted with grit and determination the obstacles of a home bereft of a father early in life and thus left with limited resources; and having demonstrated not only to her superiors and subordinates but also to the nation at large the qualities of honesty, integrity, tact, humanity, intelligence, generosity, courtesy, industry, diligence, perseverance and unswerving nationalism;

In her final hour, Miss Orosa answered her country's greatest challenge in a manner that will always be a shining light and unfailing inspiration to Filipinos of every age and clime. — *Councilor Mariano Magsalin*

Chapter VII

FOOD AND NATIONAL DEFENSE

A war is going on, surpassing in terror and cruelty all others that have gone before it. Half of the world is starving. Yet we are seemingly indifferent and unconcerned about the catastrophe that may befall us at any moment. We continue holding elaborate fiestas, picnics and parties, consuming and wasting entirely too much food.

Food is an indispensable factor to the health and strength of a people in time of war or in time of peace. It deserves a most important consideration in the planning of our national defense.

The right kind and amount of food taken in by every citizen will mean not only strong, vigorous bodies with steady nerves, but bodies resistant to diseases. Sickly, undernourished individuals are a liability to any country. They constitute a burden to the community. They need care and medical attendance and food. Yet they produce neither food nor work.

Our defense program can only be complete if it includes the building up of the health of our citizens. It can be made possible only if each and everyone of us will cooperate in making our bodies fit. Fit to enjoy the blessings of living in normal times. Fit to accomplish our assigned work in times of emergency.

Knowing what foods we need to keep healthy and well we should eat accordingly, well-balanced meals. We should increase our food supply by growing food plants in every available space on our home lots. And we should learn methods to preserve foods, storing the excess in time of plenty, against a future necessity.

We are fortunate to have for our leader, a man not only of vision and ability, but also of devotion to his people. In creat-

ing the CEA he recognized a vital need of the country. One of the most important departments of the CEA is that of the Food Administration directed and controlled by Dr. Victor Buenca-mino, under whose administration and with the cooperation of the directors of the Bureau of Plant Industry and Bureau of Animal Industry, the food production campaign is gaining success all over the Islands.

By intensifying its home extension work with the women, the Plant Utilization Division is doing its share. The R.I.C. are busy on food preservation work; home demonstrators travel from town to town demonstrating food substitutes and cooking methods for emergency; central office personnel continue formulating low-cost, but well-balanced meals and emergency recipes.

For the economy, one-dish meal recipes, only cheap, common, easily grown foods are included. As much as possible the dishes are adapted to combine with rice to make a balanced diet. Since meats, fish and eggs are expensive, soy beans and other protein food are used for substitutes.

In emergency or war, simplicity of ingredients, utensils, and method is stressed. Utensils are reduced to the rudest and simplest forms, such "natural" containers as banana sheata (saha), banana leaves and bamboo tubes being called in for service. Measuring cups and spoons are ignored, for in preparing these recipes it is assumed that nothing is on hand besides the barest essentials of food, matches and fuel.

THE OROSA PALAYOK-OVEN *

We are fortunate to have, at this time, an inexpensive oven, easy to get and to make, and simple to use.

When we consider that war, or even the threat of war, may drive people out of cities and towns and away from the supply of gas or electricity which make possible the baking of savoury, oven-cooked dishes, we feel that an inexpensive palayok-oven is nothing short of a boon.

With this oven we can do any kind of baking in the hinterlands or anywhere for that matter, and with any kind of fuel.

* Better Homes, Oct. 15, 1941.

Our people have acquired the habit of eating oven-baked foods.

For breakfast pan de sal or pan de leche is served in most homes. And yet home ovens are practically unknown in our homes.

Most of the people in the provinces as well as in the cities depend on the bakery store for their supply of bread, cookies, biscuits and cakes.

Imported ovens run by gas or electricity are convenient and desirable, for those who can afford them, and wherever gas or electric power is available. Unfortunately most of our people cannot afford them and must forego a variety of delicious oven-baked foods. Consequently they content themselves with boiling, stewing, frying, simmering, steaming and fricasseing. But notice how popular baked foods are at parties! Baked macaroni and cheese, cakes, pies and cookies — these become special treats.

In a number of ways baked foods, meat and fish for instance, are really superior to those that are fried or boiled. They are more attractive, being uniformly brown; more tasty, more nutritious, more digestible, and in the long run more economical. Meats are rendered more juicy for the searing that is a prerequisite to baking, and which prevents the juices from oozing out. Baked meats do not lose their minerals and vitamins like boiled meats. Boiling steams off the flavor where baking enhances it. Boiling toughens meat fibrins and dissolves some of the tissues.

Home baking should therefore be encouraged. Not only for cooking meats and fish but also for cooking breads and pastries.

A trip to the bakeries in the provinces will convince a housewife that it is safer and more economical to bake foods at home, whenever possible. The sight of bread handled with bare, dirty hands and wrapped in pieces of dirty papers of a crumbly "American" loaf bread which almost falls to pieces when cut with a knife, with its sourish fermented odor, cakes exceedingly yellow indicating color substitution for eggs; and a few other things that may not be pleasant about bakeries and bakery-made products, are enough to discourage a discriminating housewife from buying such preparations.

Now with the Palayok-Oven home-baking could be made more common. Surprisingly the palayok has been in use among the Filipinos for several centuries, but it has not occurred to anyone before to use it as an oven. It seems evident that with this discovery of utilizing the "PALAYOK" as an OVEN, many government projects will also be greatly facilitated.

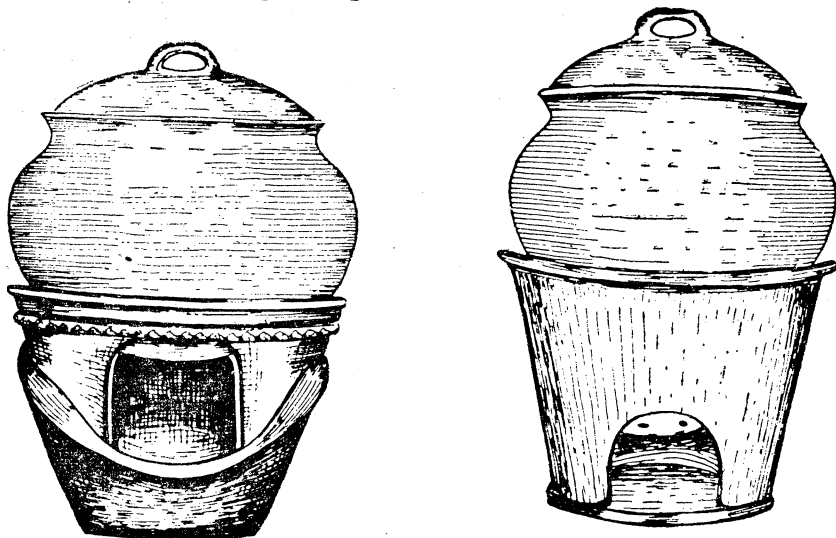
The campaign against beri-beri through the population of darak preparations did not give very fruitful results. Why? Because the mush and other boiled and fried preparations did not appeal to the palate as much as those baked in an oven such as darak bread, cookies, cakes, biscuits, and muffins. Since according to the Bureau of Health Statistics, the loss of life from beri-beri averages 20,000, annually the Palayok-Oven, by enabling house-wives to prepare darak preparations like cookies, breads, biscuits, muffins, and other palatable preparations, will play an important role in the reduction of the beri-beri mortality.

In case of war a blockade might come to pass. We would be compeled either to stop eating wheat-flour preparations, or to substitute the wheat flour with native flours such as banana, cassava, rice, corn, gabi, or ubi. These farm products which we have been popularizing would gain an easy access to our markets and homes. They will create a market for our own farm products, increase the income of our farmers, help the industrialization and economic adjustment projects of our government and assist in reducing the flour importation even during normal times.

Corn or maize, which is more nutritious and less expensive than rice and about the cooking of which we are limited to a knowledge of only a few ways, will gain a faster entrance to our homes and markets when made into flour or meal. Corn may be made into many diversified preparations. Cornbread, muffins, and biscuits may easily replace the popular breakfast breads that are made from wheat flour, such as "pan de sal", "pan de leche", and "pan de limon". Not only are these corn preparations nutritious and economical but they are also easily prepared and very attractive, having a pleasant odor and flavor and a golden-yellow color, stimulating to the appetite.

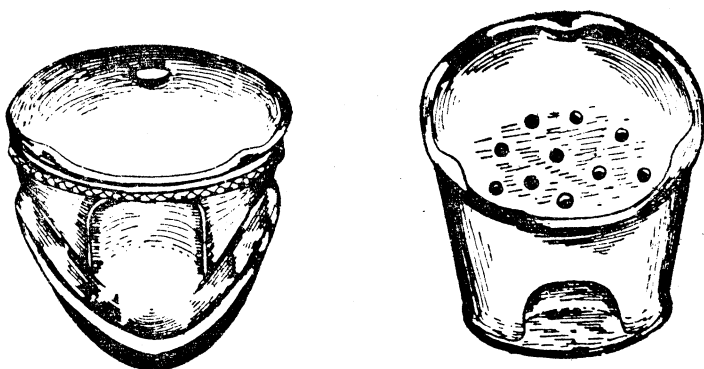
SIMPLICITY ITSELF

... is the Orosa Palayoc-Oven. But like most simple things it has to be exactly right to give best results.



Notice how it sits above, first on a native calan or stove, and then on an imitation Japanese brazier. Its sides fit snugly against the lip of either stove so that as little heat as possible emanating from the coals underneath may escape and go to waste between stove lip and pot sides.

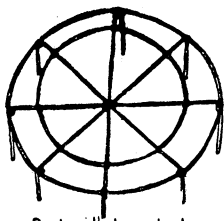
The pot and stove being both made of clay, a poor conductor, heat is concentrated and thrown upward against the wide shallow pot bottom.



Native Calan.

Japanese imitation stove

Inside the pot a metal disk catches the heat from the pot's rounded bottom and diffuses it evenly (See diagram above). On top of the metal disk stands a round *parilla* or iron rack with legs about $1\frac{1}{2}$ inches long. This rack holds the food away from the metal disk which is too hot and might burn it. At the same time its legs allow for a free circulation of hot air around the food which is the principle of oven-cooking. Another metal disk with a convenient handle fits in the neck of the stove. This disk catches the heat thrown up by the bottom disk. By reflection it aids in keeping the air inside the stove uniformly hot, and browns the top surface of the food being cooked.



Iron Wire Rack with legs about $\frac{1}{2}$ inches long



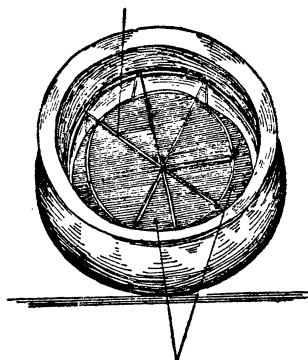
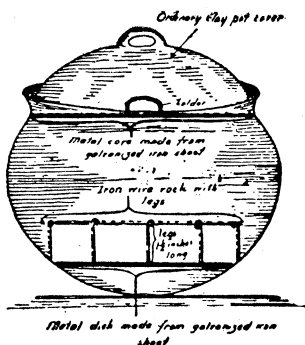
Metal disk to line the bottom of galvanized iron sheet



Metal cover with holder made from galvanized iron sheet



Ordinary clay pot cover



Finally an ordinary clay pot cover goes on top of the metal cover without, please notice, going over the pot lip. This clay

cover, again a poor conductor, acts as an insulator keeping the heat in the metal cover from escaping upwards, so that hot air may be kept circulating inside the pot between the two metal disks.

SPEAKING OF FOOD SUBSTITUTES *

LAST YEAR we imported P22,256,272.00 worth of canned and preserved food, excluding wheat flour of which we imported P9,692,054.00 worth.

That's a lot of pesos. And this state of affairs has been going on for some time. In an effort to reduce these amounts, the Plant Utilization Division of the Bureau of Plant Industry started experiments on local foods that may satisfactorily take the place of imported ones.

After a few years of scientific investigations it was discovered that cassava, corn, rice and gabi flours could substitute for wheat flour.* That the popular grape juice could be replaced by duhat juice. That canned mangoes could fill in for canned peaches, and mango jam for peach jam. And that many other little — appreciated local foods could attain more prominence and glamour by substituting for fancy imported products.

How to Make Cassava and Gabi Flours

Cassava and gabi are pared, washed thoroughly, sliced very thin, and dried in the sun till crisp. These dried cassava pieces are called gapek. They will keep if stored in hermetically sealed containers. They may be made into flour by pounding or passing through a grinder, and sifting through a fine sieve.

How to Make Cassava Starch

Peel fresh cassava, wash and chop to pieces. Grind through a chopper or stone grinder. Place finely ground cassava in a basin or tank and work with the hands. Separate the large pieces and fibers and allow starch to settle. Work the larger portions once more with the hands, adding more water. Again allow the starch to settle, separate pulp and discard it. The extracted starch is combined, stirred well, and allowed to settle and to drain. Add more water, stir the mixture, and again allow to settle. Drain all the water, scrape up the starch and place on drying tray of galvanized iron and dry thoroughly.

* Better Homes, Oct. 15, 1941.

* Coconut flour can also be a substitute to wheat flour as an extender of baked products. It contains good quality proteins and high amounts of dietary fiber. Several studies on coconut flour have been completed in various agencies in the Philippines results of the studies showed that coconut flour can be utilized in the production of chips, cookies, muffins, cinnamon rolls, hotcake mix and noddles in various proportions with wheat flour and other composite flours. They can also be added in soups and sauces, vegetable, fish and meat dishes, steamed, baked or fried snack items and desserts. For more on coconut flour recipes one may visit Philippine Coconut Authority, Diliman, Quezon City and look for Ms. Dina Masa, MBA.

How to Make Corn and Rice Flour

Dry corn or rice completely. Grind and pass through sifter. The coarsely ground corn is called corn meal. We import corn meal in vacuumized cans. These are used for making corn mush, corn muffins, and corn bread. The Plant Utilization Division has made numerous experiments in corn meal and corn flour preparations and has formulated more than one hundred recipes.

The same division has also experimented on cassava flour and found that breads, biscuits, cakes, and cookies may be made from either cassava flour or starch, or the combination of both.

The recipes that call for yeast as the leavening agent, however, the maximum amount of cassava that may be used as wheat flour substitute is 50%. The other 50% is of course made up of wheat flour. In the case of American loaf bread and pan de sal the most satisfactory combination found is 25% cassava flour and 75% wheat flour. A larger amount of cassava makes bread that hardens upon cooling.

Duhat Juice for Grape Juice

A large quantity of non-fermented, refreshing drink, the grape juice, is imported yearly. Most of these are served in hospitals and in the homes as an ingredient in home-made punch. Experiments pointed to the fact that duhat juice is as nutritious and as refreshing as the grape juice. The duhat juice has moreover, a medical property in that it contains a glucoside jambolin which reduces the sugar content in the blood of diabetic patients.

Duhat juice may be made by working the ripe duhat with the hands; expressing it by hand and measuring the juice. To the residue is added clean, boiling water, of a quantity equal to that of the pressed juice. The mass is stirred well with a wooden spoon and strained through a clean piece of cheese cloth. The two extracts (1st and 2nd) are combined and transferred into clean bottles, pasteurized, each 85° C for 30 minutes, and sealed with sterilized cork. The top of the bottle is dipped in melted paraffin.

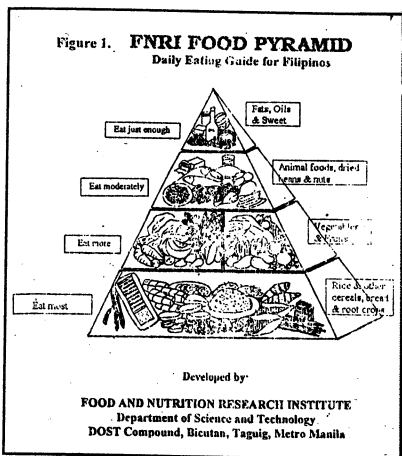
Canned Mangoes for Canned Peaches

Mangoes are cut in halves and the meat scraped with a silver spoon. The pieces are packed in clean jars, and boiling syrup of 1 to 1 (one part of sugar to 1 part of water) poured

in to fill the jar. The jar is sealed partially or somewhat loosely and sterilized in boiling water — 25 minutes for quart jars and 15 minutes for pint jars. Immediately after sterilization the jars are sealed hermetically, inverted, and cooled in that position.

Mango Jam for Peach Jam

To the scrapings from mango seeds, skin, and imperfect mangoes, add for every cup of mango pulp, $\frac{1}{2}$ cup of sugar and 1 tablespoonful of calamansi juice. Cook in an open vat, constantly stirring to prevent burning, to a thick consistency. Pour in sterilized jars while boiling hot, seal jars completely, and sterilize in boiling water — 30 minutes for quart jars, and 20 minutes for pint jars.



A WELL BALANCE DIET

1 ORGANIC NUTRIENTS

Proteins

Fats and oils

Carbohydrates

Food supplying proteins

Meat, fish, shrimps, beans, lentils, cheese, nuts, peas, fowls, etc.

Food supplying fats and oil:

Lard, butter, milk, cheese, body fats of mammals, fishes and

fowls, fish liver, coconut, peanut, olive, other nuts, etc.

Food supplying carbohydrates:

Starch, sugar, rice, maize, wheat, potato, camote, candy, honey, gabi, ubi, camoteng cahoy, etc.

II MINERAL SALT

Foods supplying inorganic substances:

Chlorine and sodium in sodium chloride (asin), water, etc.; calcium in milk, lima beans (patani), peas, eggs, re-pollo, water, etc.; phosphorous in brains, bone marrow,

* From the Bureau of Science Popular Bulletin-16

* FNRI provides a food pyramid as guide for a well balanced diet as shown: (see separate page)

meat, beans, nuts, legumes, etc.; iron in beans, peas, raisins, meat, spinach, alugbati, whole wheat, eggs, water, etc.; magnesium in meat, heart, brain, vegetables, fruits, water, etc.; iodine in salt water foods, fish, shrimps, alimasag, shellfish, water, vegetables and fruits near the sea shore; potassium in cereals, meats, vegetables, etc.; sulphur in eggs, liver, meat, mineral water, etc.; fluorine in cereals; copper, silicon, zinc, aluminum, etc.

III VITAMINS A, B, C, D, AND G

Foods supplying vitamins A and D:

D: Milk, butter, cheese, egg yolk, fish liver, avocado, carrot lettuce, spinach, alugbati, squash, pineapple, orange, cod-liver oil, etc.

Egg yolk, liver, heart, kidney, brain, meat, tikitiki and its extract, unpolished rice, whole wheat, maize, mungo, beans, yeast, camote leaves, alugbati, sitao, banana, papaya, repollo, orange, pineapple, etc.

Foods supplying vitamin C:

Orange (dalandan), calamansi, (calamondin), pomelo (lucban, suha) lemon, limonsito, dayap, lime, tomato, repollo, lechuga, pineapple, banana, papaya, etc.

Foods supplying vitamins G or B₂:

Meat, Milk, cheese, chicken, fish, eggs, shrimp, tapa (air dry meat), beans, lentils, peas, nuts, whole rice, yeast, whole wheat, etc.

IV ROUGHAGE OR INDIGESTIBLE CRUDE FIBER (CELLULOSE)

Foods supplying crude fiber:

Vegetables and fruits, batao, camansi, habichuelas, sitao, mungo, cabbage, kankong, paco, carrot, alugbati, malungay, pasao, colitis, camote leaves, young onions, etc.



Preservation of fruits, vegetables and other foods drew homemakers to the defunct Bureau of Science, now the Institute of Science, where the late Maria Y. Orosa did her pioneering work in the field of preservation. The popularity of this project led to the Creation of Home Extension Work in the Philippines.

Chapter VIII

PAPAYA RECIPES *

NATIVE PAPAYA PICKLE

- | | |
|---------------------------|---|
| 3 c grated green papaya | 1 c shredded carrot |
| ¼ c ginger, sliced thinly | ½ c green and red sweet pepper,
sliced |
| ¼ c native onion, peeled | 2 boxes of raisins |

Mix all ingredients together and add ½ c of salt to soften and to extract the water from the vegetables. Press very well until dry. Soak in vinegar overnight. The following day, drain the vinegar.

Heat:

- | | |
|-------------|--------------|
| 2 c vinegar | 1 tbsp. salt |
| 1 c sugar | |

Pour this into the mixed vegetables. Let stay overnight. Drain the following morning. Heat the syrup and pour into the vegetables again. Pack in sterilized jars.

PAPAYA GULAMAN

- | | |
|------------------------------|------------------------------|
| 2-½ cups crushed ripe papaya | 1 tablespoon calamansi juice |
| ½ cup gulaman (agar) | ¾ cup sugar |
| 1 cup water | ½ cup coconut milk |

Boil gulaman in water, add sugar and ½ tablespoon calamansi juice. When gulaman is all dissolved, remove from fire and strain well. Add the other ½ tablespoon calamansi juice to papaya, mix well, and drain. Add gulaman and coconut milk. Pour in a mold. When firm, unmold and serve cold.

PAPAYA PUDDING

- | | |
|---|--|
| 2 cups mature papaya pulp,
mashed (boiled to softness) | ¾ cup sugar |
| ½ cup breadcrumbs | 1 egg, well beaten |
| 1 cup flour | 1 teaspoon flavoring (use
vanilla, grated lime or orange
rind) |
| ¼ cup butter | |
- ¼ teaspoon salt

* More information on papaya is provided in the book "The Philippine Recommends for Papaya" of the Philippine Council for Agriculture and Resources Research and Development (PCCARD) Technical Bulletin Series No. 27-A, 1984, Los Baños, Laguna.

Cream butter and sugar. Add well beaten egg, then flour. Add papaya, salt, and breadcrumbs, then flavoring. Steam in a buttered pan for 2-½ hours, or until done. Serve with sauce made as follows:

SAUCE

1 cup milk	⅓ cup sugar
½ cup ripe papaya pulp, mashed	¼ teaspoon vanilla
2 tablespoons flour	

Mix all ingredients except flavoring and boil continuously stirring, until thick. Add flavoring immediately after removing from fire.

PAPAYA CUSTARD

1 cup milk, scalded	¼ cup ripe papaya passed thru a sieve
1 egg yolk	
2 tablespoons cornstarch	½ teaspoon calamansi juice
¼ cup sugar	A pinch of salt.
½ teaspoon vanilla	

Beat egg yolk slightly and add sugar and salt. Add papaya, calamansi juice, milk, and cornstarch and mix well. Cook in a double boiler until thick. Add vanilla just before removing from fire.

PAPAYA MALACOFF

Line a greased mold with lady fingers and papaya preserve arranged alternately. Cover with boiled papaya custard. Fill the mold alternately with more sliced papaya preserve, lady fingers and boiled papaya custard, and place in a refrigerator to chill. Unmold and serve cold.

PAPAYA-PILI NUT ROLL

4 cups ripe papaya pulp, mashed	1 cup pili nuts, roasted and chopped
2 cups sugar	
4 tablespoons calamansi juice	1 teaspoon vanilla or any other flavoring
4 tablespoons glucose	

Mix papaya pulp, sugar, glucose, and calamansi juice and cook with continuous stirring until a paste consistency is reached (223F). Remove from fire, add flavoring and nuts, and stir well. Pour on a greased pan and roll to about ¼ inch

thick. Upon cooling, sprinkle sugar. Roll as in ordinary roll, using a piece of clean cloth or oiled paper to effect a tight rolling. Cut crosswise to desired thickness.

PAPAYA TIDBITS

- | | |
|---|----------------------------|
| 1 cup candied papaya | ¼ teaspoonful salt |
| ½ cup papaya maraschino, well drained | ½ cup confectioner's sugar |
| ½ cup roasted peanuts (other nuts maybe used) | |

Mix papaya, peanuts, maraschino, and pass through a food chopper. Add salt and sugar and mix well. If somewhat dry add a small amount of calamansi juice. Roll to a long, cylindrical form and dust with sugar. Let stand about 2 hours. Slice before serving.

CREAM OF PAPAYA SOUP

- | | |
|-----------------------------------|--|
| 1 cup ripe papaya | 2 cups water |
| 2 bay leaves | 2 tablespoons flour |
| 1 onion, sliced | ½ cup evaporated milk; add water to make ⅔ cup |
| white sauce | |
| 2 tablespoons butter or margarine | ½ teaspoon salt |
| | A pinch of pepper |

Boil papaya with bay leaves, water, and onion, 10 minutes. Pass through a sieve and set aside. Melt butter or margarine; stir in flour; add milk and cook until thick.

Mix strained papaya and white sauce and boil. Season with salt and pepper. Serve hot.

PAPAYA ESCABECHE

- | | |
|---|---|
| 2 cups green papaya, cut in strips | 3 tablespoons vinegar |
| 1 medium-sized fish | 1-½ cups water |
| 1 large onion, sliced | 3 tablespoons toyo |
| 1 head garlic, sliced thin | 1-½ tablespoons flour or Cassava starch |
| 1 tablespoon ginger, sliced into strips | 4 tablespoons lard |
| 1 hot pepper, cut in strips | 2 teaspoons salt |
| | Fat for frying fish |

Clean fish and sprinkle with salt. Let stand about 15 minutes, and drain well. Fry in hot fat until brown and set aside. Sauté garlic, ginger, onion, and papaya until papaya is half cooked. Add salt and hot pepper into the mixture. Cook until liquid thickens and the papaya becomes tender. Place

fried fish in a platter and pour over it the gravy mixture. Garnish with sliced red-sweet pepper.

PAPAYA OKOY

- | | |
|---|--|
| 2 cups green papaya, shredded | 1 teaspoon salt |
| 2 tablespoons onion, sliced | 1 tablespoon green onions, cut to small pieces |
| 1 cup shrimp extract (made by pounding heads and tails of shrimps, working with water, and straining) | A few shrimps (small size) |
| ¾ cup cornstarch | 1 egg |
| | 3 tablespoons coarse salt |
| | Lard for frying |

Work green papaya with 3 tablespoons coarse salt. Wash and press water out by squeezing between palms of the hands. Mix onions. Set aside.

Make a thin batter by mixing shrimp extract, cornstarch, slightly beaten egg, and salt. Add green onions. Place a tablespoonful of papaya in a saucer and pour over it 1-1/2 tablespoons of batter. Place on top two or more shrimps, and fry in deep, hot fat until brown. Serve with a mixture of vinegar, pounded garlic and salt to taste.

PAPAYA DINUGUAN

- | | |
|---|-----------------------|
| 2 cups green papaya, cut in thin strips | ¼ cup camias, chopped |
| ½ cup ground pork | 1 tablespoon salt |
| 2 cups chopped pig's blood, soaked in ½ cup vinegar | 1 hot pepper |
| ½ tablespoon onion, sliced | 2 tablespoons lard |
| 2 tablespoons tomatoes, sliced | 1 segment garlic |
| | 2 cups water |
| | 1 tablespoon sugar |

Sauté garlic, onion, tomatoes, and camias. Add ground pork and continue sauteing about 3 minutes. Add papaya and salt and continue cooking until papaya becomes tender. Add water and bring to a boil. Add blood, stirring constantly while adding. Drop in hot pepper and let mixture boil until blood is cooked and thick. Add sugar, and mix well. Serve hot.

PAPAYA CHOPSUEY

- | | |
|---|---|
| 2 cups green papaya, sliced thin and long | 2-½ tablespoons toyo |
| ¼ cup pork, sliced in pieces | 1 tablespoon flour |
| ¼ cup shrimp (whole) | ½ cup cabbage, cut in pieces |
| 1 teaspoon kinchay, cut in pieces | 1 Chinese sausage, cut crosswise to thin slices |
| 2 small onions, each cut in 4 parts | 2 tablespoons lard |
| ¼ cup liver, cut in pieces | ¾ cup broth |
| | ½ teaspoon sugar |

Sauté the pork, then shrimp, liver and sausage. Season with toyo. Add kinchay and papaya, then the broth. Boil until papaya is tender. Add onions, cabbage, and sugar. Add a thin paste made with flour and about 4 tablespoons water. Boil until gravy thickens. Remove from fire and serve hot.

PAPAYA LUMPIA

3 cups green papaya, shredded to long, narrow pieces	2 tablespoons onion, sliced
½ cup pork, sliced to small pieces	12 lumpia wrappers
¼ cup shrimps, sliced	2 tablespoons lard
2 segmens garlic, chopped fine	¼ cup broth or shrimp extract
	½ cup sauce

Sauté garlic in lard; add onion, pork, and shrimps, and continue sauteing until done. Stir in the shrimp extract. Add papaya and cook until papaya is tender. Add sauce and mix well. Wrap in lumpia wrapper just before serving, and serve with sauce.

SAUCE

1-½ cups water	12 brown sugar
12 teaspoons cornstarch	½ cup toyo

Mix all ingredients and boil until thick, stirring constantly to prevent scorching.

BAKED PAPAYA-COMBINATION

1 cup green papaya, sliced	1 teaspoon salt
½ cup tomatoes, sliced	⅓ teaspoons black pepper, ground
2 tablespoons onion, chopped	
1 tablespoon green pepper, cut in pieces	1-½ tablespoon butter
	¼ cup water

Mix all ingredients and place in a greased baking dish. Bake in moderate oven about 30 minutes.

PAPAYA FRITTER

2 cups half ripe papaya, finely sliced	¼ teaspoon salt
1-¼ cups flour	⅔ cup milk, diluted with water (50-50)
2 teaspoons baking powder	1 egg

Mix well beaten egg and milk; add to sifted dry ingredients; add papaya and mix well. Drop the mixture by tablespoonfuls in deep-hot fat and fry until golden brown. Roll in sugar.

PAPAYA SALAD

- | | |
|---|-----------------------------|
| 1 cup mature papaya, cut in cubes | ½ tablespoon onion, chopped |
| | French dressing |
| 1 tablespoon shrimp, boiled in salt water, peeled and cut in pieces | Parsley |
| | Fresh lettuce leaves |

Mix papaya, shrimp, and onions. Add French dressing. Arrange on a bed of lettuce in a salad plate, and garnish with parsley. Chill and serve cold if refrigeration facility is available.

ROYAL-PAPAYA SALAD

- | | |
|---|-----------------------------------|
| 2 cups green but mature papaya, cut in strips | ⅓ cup celery cut to fine pieces |
| ½ cup vienna sausage, cut in strips | 5 tablespoons Mayonnaise dressing |
| | 8 tablespoons French dressing |

Soak sliced papaya in French dressing for 5 minutes. Drain well and add vienna sausage, celery, and mayonnaise dressing. Mix well. Chill and serve cold.

Chapter IX

VEGETABLE RECIPES

TALINUM RECIPES *

TALINUM-EGGPLANT APPETIZER

- | | |
|-------------------------------|-------------------------|
| 2 cups blanched talinum | 1 segment minced garlic |
| 1 eggplant, boiled and mashed | Bagoong to taste |
| 4 tablespoons vinegar | |

Arrange talinum on a platter. Put mashed eggplant on top. Mix bagoong, vinegar, and garlic and pour over talinum.

TALINUM & CASSAVA COMBINATION

- | | |
|----------------------------------|--------------------------|
| 2 cups talinum | ½ tsp. salt |
| 1½ cups sincamas cut into strips | 2 cups water |
| 2 tbsp. fresh cassava (grated) | 3 native onions (sliced) |
| 1½ tbsp. lard | |

Sauté onion, sincamas and toyo. Mix together and then add water. Let it boil for 3 minutes and then drop the cassava.

Cook, to thicken; add salt. Drop the talinum and cook for 3 minutes. Serve while hot.

MONGO WITH TALINUM

- | | |
|--|----------------|
| 1 cupful talinum | 3 tbsp. lard |
| 1½ cup boiled mongo | 7 cups water |
| ½ cup pork fat (cut & made into chicharon) | 1½ tsp. salt |
| | ½ onion sliced |
| 1 piece garlic pounded | |

Boil ½ cup mongo until tender. Add the chicharon to the boiled mongo to soften. Season with salt.

Sauté the garlic, add onion. Pour the mongo and let boil for 5 minutes. Add talinum and cook for 3 minutes. Serve hot.

TALINUM SIMPLE DISH

- | | |
|---|------------------------|
| 1½ cups talinum | 1 tomato chopped |
| 2 small "tokuas" (soy beanscurd) cut into small cubes | 1 piece garlic pounded |
| | 2 tsp. lard |
| ½ cup dried alamang | 1 cup water |

* From Better Homes — official organ of the Plant Utilization Division before World War II.

Fry tokua until light brown; sauté garlic, tomatoes, onion, alamang and tokua. Cook together and then add water. Cook for 10 minutes over a slow fire and mix in the talinum. Cook 3 minutes and serve while hot.

TALINUM SHRIMPS SALAD

1 cupful talinum	¼ cup mayonnaise (dressing)
⅓ cup shrimps (boiled and shelled)	1½ c. water
2 tomatoes	1 tsp. salt
	1 tsp. sugar

Boil water; add salt and sugar. Blanch talinum for 3 minutes and drain. Mix talinum, shrimps and mayonnaise. Garnish with slices of tomatoes putting the rest of the mayonnaise on top of the tomatoes. Chill if possible. Serve.

TALINUM WHITE SOUP

3 cups talinum	5 cups coconut milk
¼ cups cooked pork, diced	2 cups white stock of vegetables
1 cup cassava, diced	1 egg (hard-boiled, chopped)
1 medium sized onion, chopped	

Boil cassava and onion. Add pork. When done, remove from fire and add coconut milk, stirring constantly. Return to stove and let boil, stirring constantly to prevent curdling. Add talinum and cook 2 minutes longer. Garnish with egg and serve hot.

TALINUM WITH CRAB

1½ cups talinum (cut into pieces)	1 tablespoon fat
½ cup crab, boiled and flaked	1 section garlic
1 onion, sliced	Toyo and pepper to taste
1 cup broth, pork and shrimp	1 teaspoon flour

Sauté garlic, onion, and crab; add toyo. Pour in the broth and let boil. Add talinum; season with pepper. Thicken broth with flour and boil for a while. Serve hot.

TALINUM IN BLANKET

2 cups cut into small pieces (talinum)	8 string beans
1 tablespoon lard	½ cup shrimp and pork juice
1 segment garlic	½ teaspoon salt
1 diced onion	2 eggs
1 diced tomato	5 shrimps, shelled and halved
3 tablespoons, diced, cooked pork	
Toyo and pepper to taste	

Sauté garlic, onion, and tomato, add pork, shrimp, string beans and toyo. Add shrimps and pork juice and let boil. Add talinum. Remove from fire and set aside. Beat eggs very well; and fry spreading thinly, over the bottom of the pan. Remove from fire. Put the cooked vegetables on the cooked egg and roll. Serve hot with tomato catsup.

REGULAR SALAD

2 cups talinum	1 regular sized tomato
5 regular sized boiled shrimps	1 regular sized onion
½ cup fried "dilis" (dried, tiny transparent fish)	⅓ cup vinegar
	Sugar, salt, and pepper to taste

Blanch talinum for 1 minute. Drain, marinate with vinegar, salt and sugar mixtures. Place on a platter and file the dilis upside down in the middle of the platter. Garnish with remaining ingredients.

ALUGBATI RECIPES *

ALUGBATI WITH MEAT

2 bundles alugbati	½ onion (sliced)
2 ripe tomatoes (sliced)	1 cup cold water (or more)
2 cloves garlic (crushed)	2 tablespoons lard
	Salt to taste

Salt meat and set aside. Wash and sort alugbati taking care to remove bugs or other insect that may cling to some of the leaves. Sauté garlic, onion, and tomatoes. When done put the meat and cook about 10 minutes. Add cold water and cook until meat is almost done. Add alugbati and cook till tender. Season with salt and serve.

ALUGBATI WITH SHRIMPS

5 bundles alugbati	8 glasses cold water
3 ripe tomatoes (sliced)	1 cup peeled shrimps
2 tablespoons lard	Salt and some onions

Sort and wash alugbati. Sauté tomatoes and shrimps. When partly browned add the water and bring to a boil. Add alugbati and boil until tender.

ALUGBATI PLAIN GUISADO

1½ cups alugbati	1 teaspoon toyo
1 piece garlic, minced	¼ teaspoon salt
1 tablespoon lard	1½ cups water

* From "Better Homes".

Sauté garlic, add toyo, pour in water, boil and add salt to taste. Add alugbati leaves and cook for 5 minutes uncovered. Then pour into a deep plate and serve hot.

ALUGBATI GUISADO WITH BAGOONG

1½ cups alugbati	2 tomatoes, chopped
¼ cup pork, hal boiled and cut into cubes	½ onion, salted
1 tablespoon bagoong alamang (salted shrimps)	1 tablespoon lard
	1 piece garlic, pounded

Sauté garlic until brown. Add onion, tomatoes, pork, and bagoong. Stir together for a while. Then add water and boil for ten minutes. Add alugbati leaves, cook for 3 minutes, remove from fire and serve.

CHAYA RECIPES *

CHAYA

A Vegetable (*Jatropha urens* L) Euphorbiaceas

Chaya is a semi-harbaceous shrub, 2 or more meters big, and a native of Mexico. The branches are thick and fleshy and bear dark green, 3 lobed leaves and small white flowers. Introduced in 1919, this succeeds well at sea level. Easily propagated by cuttings.

The stem as well as the leaves are edible. The stem is peeled thick enough so that the white pitch of the stem is utilized.

CHAYA WITH CRABS

1½ cups chaya cut one inch long	½ cup green onion cut into 2 in. long
⅓ cup crab meat (boiled)	1 tablespoon lard
½ onion sliced	1 cup juice (pounded crab shells)
2 tablespoons "toyo"	Dash of pepper

Sauté onion, chaya and juice. Season with toyo and pepper. Cook for few minutes. Add crab meat and green onion. Mix for a while and serve hot.

HOT CHAYA GUISADO

1 cup sliced chaya	1 tablespoon lard
¼ head onion (chopped)	2 tablespoons salt
1 small sweet red pepper	1 segment garlic (pounded)
⅓ cup boiled crab	1 hot pepper (native)
1½ cups coco milk	

* From the Bureau of Plant Utilization Division.

Cut chaya thinly crosswise. Sauté garlic, add onion, chaya, coconut milk and salt. Cook ten minutes. Add the hot pepper. Mix and serve.

CHAYA ROLLS

- | | |
|---|---------------------------|
| 1 cup chaya (chopped) | 1 cup coco milk |
| 1 tablespoon chopped onion | 1 cup broth |
| ⅓ cup blanched shrimps, shelled and diced | 1 teaspoon cornstarch |
| | 3 blanched cabbage leaves |
| 1 teaspoon salt | |

Boil coconut milk; add onion, chaya, shrimps, and salt. Cook until liquid thickens. Add cornstarch and let it cook until thick. Cool. Boil in blanched leaves. Allow to cook 5 minutes longer in a little broth. Serve hot.

GUINATAAN (YOUNG CHAYA LEAVES)

- | | |
|------------------------------|--|
| 1 cup young chaya leaves | 3 segments garlic (pounded) |
| 1 cup coconut milk (diluted) | Few leaves of "tanglad" or lemon grass |
| ¼ cup pork (diced) | 1 tablespoon bagoong alamang |

Wilt young chaya leaves under the sun for 10 minutes then shred. Sun again for another 10 minutes. Place coconut milk in frying pan, add garlic, pork, lemon grass, and boil. Add bagoong and chaya leaves. Cook until very little sauce is left or until oil comes out. Remove lemon grass and serve hot.

CHAYA-ALAMANG GUISADO

- | | |
|---------------------------------------|----------------------|
| 1⅓ cups (peel stems and slice leaves) | 1 tablespoon lard |
| ¼ cup tamatoes, chopped | ⅓ cup "dilis" sliced |
| ½ head onion sliced | 1½ tblsps alamang |
| ¼ cup pork fat | 1½ cups water |
| | 1 teaspoon salt |
| 1 segment garlic, pounded | |

Fry the pork fat. Sauté garlic, onion and tomatoes. Cook for a while. Add alamang, chaya and "dilis". Keep on stirring for a few minutes. Add water and let it boil. Remove before the broth dries up.

CHAYA-SQUASH COMBINATION

- | | |
|--|-------------------------------|
| 1 cup sliced chaya (2 in. long) | into cubes) |
| 1 cup sliced squash or ½ cup dehydrated squash (soaked in water 5 minutes) | 1 tablespoon lard |
| ½ medium sized onion, sliced | 2 segments garlic, minced |
| 3 medium sized tomatoes (cut | 2 tablespoons bagoong alamang |
| | 1 teaspoon salt |
| | 1 cup water |

Sauté garlic, onion, tomatoes, bagoong and chaya. Mix and add water; let it boil. Add salt and squash. Cook for 10 minutes and serve.

FARMERS' DISH

- | | |
|--|---------------------------------|
| 1 cup chaya cut into cubes | 2 ripe tomatoes, cut to pieces |
| 1 regular sized dried fish
"daing" | $\frac{1}{4}$ cup onion, sliced |
| 1 cup squash (dehydrated) or
2 cups sliced fresh squash | 2 tablespoons lard |
| $\frac{1}{3}$ cup green onion, cut 1 in. long. | 2 segments garlic, minced |
| | $\frac{1}{2}$ tablespoon salt |
| | 2 cups water |

Sauté garlic, onion, tomatoes, and chaya. Add water and boil; add "daing" that was previously cut to big pieces and soaked in water for 10 minutes. Add green onion and squash. Cook until almost dry.

CHAYA "SINIGANG"

- | | |
|---|--|
| $\frac{1}{2}$ cup pork cut into big cubes | $1\frac{1}{2}$ cups chaya cut 3 in, long |
| 2 regular sized ripe tomatoes
(sliced) | $\frac{1}{4}$ onion, sliced |
| 4 pieces "camias" cut into
halves | 2 teaspoons "patis" |
| | 2 teaspoons salt |
| | $2\frac{1}{2}$ cups rice water |

Boil rice water together with tomatoes, camias and onion. Add pork, chaya and salt. When pork is tender add patis and serve.

ESTOFADO CON CHAYA

- | | |
|-------------------------------|------------------------------|
| 1 small sized pork tongue | $\frac{1}{3}$ cup vinegar |
| $1\frac{1}{2}$ cups chaya | 1 tablespoon salt |
| 1 potato fried | $\frac{1}{4}$ cup white wine |
| 3 "saba" bananas peeled whole | 1 teaspoon allspice |
| 1 "pande sal (bread) fried | 5 cups water |
| $\frac{1}{3}$ cup sugar | 3 segments garlic |
| | $\frac{1}{4}$ cup toyo |

Fry potatoes, "saba" bananas and bread in hot fat. Set aside. Boil tongue with the rest of the ingredients except chaya, until tender. Slice tongue and return to soften; add chaya and the fried ingredients. Cook until done.

CHAYA KILAWIN

- | | |
|---|---|
| $4\frac{1}{2}$ cups chaya cut to strips | 1 onion (sliced) |
| $\frac{1}{2}$ cup pork meat | $\frac{1}{3}$ cup green onion |
| $\frac{1}{2}$ sliced liver | $2\frac{1}{2}$ tablespoons salt dash or
pepper |
| 2 segments garlic (pounded) | |
| $\frac{1}{2}$ cup pork heart | |

Cut pork meat, liver and heart into small pieces. Sauté the garlic until brown; add onion and meat with the liver and heart. Pour the vinegar and water. Boil uncovered. Add chaya and salt. Cook 10 min. or until chaya and meat are tender. Add green onions and enough pepper to taste. Serve hot.

CHAYA LUMPIA (fresh)

1½ cups chaya cut into thin strips	2 tablespoons lard
1 cup squash cut into thin strips	1 tablespoon "achuete" coloring
⅓ cup shrimps boiled and diced	1 cup broth
3 segments garlic, pounded	1 teaspoon salt
½ onion, sliced	⅓ cup pork, boiled and diced

Sauté garlic; add pork, shrimps, chaya and squash. Add salt and broth, together with the "achuete" coloring. Cook until done. Wrap 2 tablespoons of the mixture in lumpia wrapper lined with lettuce leaves.

Serve with sauce:

4 tablespoons sugar, caramelized	4 tablespoons "toyo"
¼ cup brown sugar	1½ cups water
3 teaspoons cornstarch	6 segments garlic (pounded)

Mix sugar, cornstarch, "toyo" and water. Set aside. Caramelize 4 tablespoons sugar and gradually add to this first mixture, stirring constantly until smooth sauce is formed.

CHAYA IN COCO MILK

2 cups chaya cut 1 inch long	3 tablespoons shrimps (blanched and diced)
1½ cups coconut milk (diluted)	2 teaspoons coarse salt
¼ cup pork diced	3 segments garlic, pounded

Fry fat until lard is extracted. Leave 1 tablespoon of lard in the saucepan. Sauté garlic; add shrimps, chaya and salt. Add coconut milk. Let it boil once then cover and cook 15 minutes or until chaya is tender.

CHAYA WITH COCONUT SAUCE

1 cup chaya cut thinly, crosswise	1½ cups coconut milk (diluted)
¼ cup pork diced	2 segments garlic, minced
1 tablespoon shrimps, chopped	1 tablespoon bagoong alamang

Put coconut milk, pork, shrimps, and garlic in a saucepan. Let it boil. Add alamang, and cook until enough sauce is left.

KARI-KARI WITH CHAYA

½ kilo "goto"	⅓ cup roasted peanuts, pounded
2 eggplants	½ onion, chopped
1 banana blossom	2 segments garlic, pounded
½ cup "sitao"	⅓ cup "achuete" coloring
2 cups chaya	½ cup bagoong alamang
⅓ cup roasted rice, pounded	8 cups water

Boil "goto" until tender. Slice and prepare ingredients. Sauté garlic, onion and "achuete" coloring. Add the "goto" and stick. Cook until tender. Add peanuts and rice; boil. Drop vegetables; cover and simmer until the vegetables are done. Serve with bagoong "guisado".

CHAYA WITH SOTANGHON

1 cup chaya cut, diced	1 cup "sotanghon"
3 medium-sized tomatoes, chopped	(oaked and cut short)
½ cup ground pork	2 cups water
2 segments garlic	4 tablespoons "patis"
	Dash of pepper
2 tablespoons lard	

Sauté garlic, add onion, tomatoes and pork. Stir for a while then add chaya, "patis" and dash of pepper. Add sotanghon and water and cook until a small amount of broth is left. Serve hot.

CHAYA PANSIT CANTON

1½ cups chaya (shredded thinly, 2 inches long)	¼ cup green onion, cut finely
¼ cup blanched, shelled shrimps	3 cups noodles (fried)
¼ cup carrots, shredded	1 tablespoon lard
½ cup boiled pork (sliced)	2 tablespoons "toyo"
	1 teaspoon cornstarch
	2 cups broth
	Dash of pepper
	¼ cup onion, sliced

Sauté onion, pork, chaya, carrots and shrimps. Add toyo and broth. When cooked, add a dash of pepper. Remove half of the mixture and add noodles. Cook 3 minutes longer. Set aside on a platter. Thicken the other half of the mixture with cornstarch and pour on top of the noodles. Serve hot.

ing in double boiler. Add the peanuts last before a serving. Serve on toast.

Good for a luncheon dish.

CREAMED PEANUT AND RICE

1 cup rice (uncooked)	½ teaspoon paprika
2 cups chopped peanuts	2 teaspoons salt
White sauce:	3 tablespoons flour
3 tablespoons fat	3 cups milk (whole or skin)

Boil the rice. Make a white sauce by blending the flour with the melted fat and stirring in the milk. Stir mixture over fire until it thickens. Mix rice, peanuts and seasoning with sauce, place in greased baking dish and bake 20 minutes.

PEANUT BRITTLE

1 cup chopped roasted peanut	¾ cup sugar
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On a slow fire, melt sugar in a copper vat or any shallow container. When melted pour the peanut in and stir until well mixed. Pour on a greased board and spread thin. With a rolling pin, roll to a thin sheet. Cut to desired forms. Wrap in wax paper or any candy wrapper.

FRIED PEANUT

1 cup blanched peanut	½ teaspoon salt
1 teaspoon pounded garlic	2 tablespoons lard

Blanch peanut in boiling water from 5 to 8 minutes. Remove from fire and drain thoroughly. Fry in deep, hot fat. Sautè garlic in a small amount of lard, add fried peanut. Drain, and salt to taste.

PORK AND PEANUT

1 cup peeled boiled fresh peanut	4 pieces boiled pork
¾ cup tomato sauce (or 1 small can)	Dash of white pepper and sugar
	½ teaspoon salt

Mix all ingredients mentioned above, and bake in a moderate oven, until golden brown. Serve hot.

BOILED PEANUT SALAD

½ cup boiled peanut (peeled)	1 small tomato
½ cup blanched habichuelas (green beans), cut into cubes	2 regular size shrimps
	1 regular size onion.
½ cup blanched cabbage, cut fine	

Blanch habichuelas and cut into cubes. Shred cabbage and blanch.

Marinate in French dressing.

Arrange on a platter and garnish with boiled shrimps, sliced tomatoes and onions. Dress with French dressing and serve.

BOILED PEANUT LUMPIA

½ cup boiled peanut	1 tablespoon lard
½ cup habichuelas (cut in cubes)	1 tablespoon salt
⅓ cup cabbage (cut thin)	Dash of white pepper
1 tablespoon onion	⅓ cup shrimp juice
1 clove of garlic	Shrimps

Wrappers

Sautè garlic and onion. Add shrimps, habichuelas and cabbage. Cook for a few minutes. Add shrimp stock stirring constantly to avoid curdling. Season with salt and pepper.

When done remove from fire and wrap in lumpia wrapper. Fry lumpia bundles in deep hot fat. Serve hot with vinegar seasoned with salt, garlic, and pepper, or Lumpia Sauce.

LUMPIA SAUCE

½ cup sugar	½ cup sugar
5 tablespoons cornstarch	⅓ cup toyo
2 cups water	

Add all ingredients to the caramelized sugar and stir continuously over a slow fire until desired consistency is reached

PEANUT BALLS WITH SUTANGHON

½ cup chopped boiled peanut	Dash of white pepper
½ cup sutanghon	½ cup chopped pork
2 tablespoons onion	1 egg
1 tablespoon lard	1 tablespoon salt
1 clove of garlic	2 cups broth green onion

Mix peanut, pork, salt, pepper, green onion, and beaten egg, together and form into balls. Set aside. Sautè garlic and onion. Add the broth and let boil. Drop in the peanuts and cook till pork is done. Add the soaked sotanghon. Add salt and pepper to taste. Remove from fire and serve hot.

PASTILLAS DE MANI

1 cup ground fresh peanut	¾ cup milk
⅓ cup sugar	

Pass peanut through a grinder. Mix all ingredients together and cook on a slow fire, stirring constantly to avoid burning. Cook to a thick consistency. Sprinkle sugar on a piece of bread and spread peanut paste with the aid of a rolling pin. Cut to desired shape or form. Roll in sugar and wrap in wax paper.

PEANUT MAZAPAN

1 cup ground peanut	1¼ cup milk
¾ cup sugar	1 egg

Mix ingredients except the egg. Cook mixture until thick. Cool and add beaten egg. Cook again slowly, stirring constantly, until desired consistency is reached. Shape to desired forms and bake in moderate oven until brown.

Peanut Candies

2 cups fresh peanut, ground fine	½ cup water
1 cup sugar	

Make syrup without stirring. When thick add peanut and stir constantly to avoid burning. Test the mixture to see whether it is ready for pouring, by dropping a small amount in cold water. If the mixture forms hard balls, remove it from the fire. Pour on a greased board and roll out to a sheet ½cm. thick. Cut into bar of convenient lengths and wrap in wax paper.

Chapter XI.

RICE AND CORN RECIPES

CORN OKOY

- | | |
|---|---|
| ½ cup boiled shelled shrimps with little salt | ⅓ cup shrimp juice. Mix with 1 cup flour |
| 1 soybean or tokua — in cubes | 1 tbsp achuete and ⅓ cup clean water — Mix for coloring |
| ½ cup | 1 teaspoon salt |
| 1 boiled egg sliced | Enough lard to fry |
| 1 cup corn — canned and drained or fresh | |

Mix flour and shrimp juice and add salt. Add ¼ cup achuete coloring. Mix drained corn, tokua and shrimps and drop by spoonfuls into deep hot fat putting a slice of egg on top. Brown and serve with vinegar salt and pepper to taste.

CORN SOUP

- | | |
|--------------------------|-------------------------------------|
| 1 cup chopped green corn | 1 cup pepper leaves (sileng labuyo) |
| 1 onion, sliced | 1 segment garlic, (minced) |
| ¼ cup sliced shrimp | Dash of pepper |
| 1 tablespoon lard | Salt to taste |
| 4 cups stock | |

Sauté garlic, then the onion, and shrimps; then add chopped corn. Add stock and allow to simmer until the corn is tender. Season. Add pepper leaves 3 minutes before removing from fire. Serve hot.

CORN WITH CLAMS

- | | |
|-------------------------|-----------------------------|
| 1 cup grated young corn | 2 tablespoons sliced onions |
| 12 clams | ⅛ teaspoon chopped ginger |
| 1 cup clam stock | 1 tablespoon lard |

Sauté onions in lard; add clams and ginger. Add young corn and stock. Boil and continue cooking in slow fire until corn is tender. Salt to taste.

YOUNG CORN ROLLS

- | | |
|---------------------|--------------------------|
| ½ cup cassava flour | 1 teaspoon baking powder |
| ½ cup wheat flour | Flour to roll |
| ¼ cup coconut milk | |

* Recent advances on rice is found in "Philippine Rice Research and Development Highlights 1997" published by the Philippine Rice Research Institute, Muñoz, Nueva Ecija.

Mix all ingredients, roll to $\frac{1}{4}$ inch thick, and cut into squares. Set aside.

FILLING:

1 cup boiled flaked fish	$\frac{1}{8}$ teaspoon pepper
$\frac{1}{3}$ cup young corn, chopped	1 tablespoon fat
Juice of 1 calamansi	$\frac{1}{2}$ cup coconut milk
	$\frac{1}{2}$ teaspoon salt

Melt fat; add all ingredients and cook five minutes over a slow fire. Fill dough with this mixture and roll $3\frac{1}{2}$ inches long. Place in greased baking dish and bake in hot palayok-oven for 20 minutes.

CORN LOAF

$\frac{1}{2}$ cup corn flour	2 eggs
$1\frac{1}{2}$ cups ground pork	$\frac{1}{2}$ onion (chopped)
	Pinch of salt, pepper

Mix flour, eggs and salt to form a dough. Shape into a loaf. Line a pan and fill the inside with the ground pork mixture. Bake in the palayok-oven for 45 minutes with onion and pepper.

DELICIOUS CORN TURN-OVER

$\frac{1}{2}$ cup corn flour	1 tablespoon shortening
1 slice pineapple	3 eggs
6 pieces mango	$\frac{1}{3}$ cup granulated sugar
$\frac{1}{4}$ cup brown sugar	1 teaspoon baking powder
	2 tablespoons water

Boil water, sugar and shortening in a pie plate. Arrange pineapple at the center, scooped mangoes at the sides and set aside.

Beat eggs separately and mix. Fold in sugar and other sifted dry ingredients. Pour this over the arranged fruits. Bake in the oven for 25 minutes. Turn over into a cake plate.

PAELLA

1 kilo chicken (dumalaga)	$\frac{1}{4}$ tsp. monosodium glutamate
Boiling water	1 bottle beer or ale
1 small onion, sliced	$\frac{1}{2}$ teaspoon oregano
1 stalk celery, cut	$\frac{1}{4}$ teaspoon pepper
2-3 sprigs parsley, finely cut	2 teaspoons salt
4 tablespoons salad oil	$\frac{1}{2}$ cup cooked peas
2 cloves garlic, crushed	$\frac{1}{4}$ cup pimientos, cut in pieces
2 cups uncooked rice	$\frac{1}{2}$ pound sweet sausage, sliced
	$2\frac{1}{2}$ cups chicken broth

Place chicken in large kettle; cover with boiling water. Add onion, celery, parsley and salt. Cover and simmer until tender, about 2 hours. Remove chicken from broth; cut into pieces. Measure broth, add sausage and boil until liquid is reduced to 2½ cups. Heat salad oil in a shallow casserole. Add crushed garlic cloves and rice. Cook over low heat until rice is lightly browned. Add chicken broth, beer, oregano, pepper, salt, the cut chicken, peas, pimientos and sausage. Bring to a boil; stir and reduce heat; cover and cook over low heat 15 minutes. Add peeled shrimps. Mix lightly. Put clams part way into rice, standing upright. When cooked, the shells pop open to form a decorative pattern. Cover and cook 10 minutes.

ARROZ A LA CUBANA

2 cups of ground meat	1 small package seedless raisins
6 cups cooked rice	3 tablespoons tomato catchup
4 tablespoons lard	4 saba bananas sliced lengthwise and fried
2 crushed garlic heads	2 fried eggs.
1 onion chopped	
1 small canned tomatoes	

Sauté the garlic, onion and tomatoes in the lard. When half of the water has evaporated add the ground pork and raisins which have been soaked in water and mix well. Cook over a slow fire for five minutes stirring it constantly to avoid sticking. Season with salt.

Mould the rice in a platter. Spread the mixture on top covering all the rice. Garnish with two fried eggs on top and fried bananas on the sides.

CORN WITH CHICKEN MEAT

1 cup corn (scrapped)	¼ tsp. pepper.
1 cup chicken (cut into pieces)	½ c. sili leaves (pepper)
1 segment garlic, minced	1 tsp. lard
1 tsp. toyo	2½ c. water
½ tsp. salt	½ onion, sliced

Sauté garlic and onion; add corn and chicken. Season with toyo and salt; add water and boil. Cook until corn and chicken are tender. Add sili leaves. Cook for 2 minutes and serve.

STUFFED CHICKEN MEAT IN CORN SOUP

1 cup corn, scrapped	1 tbsp. lard
¼ cup chicken meat, chopped finely	¼ tsp. pepper
	2½ c. water
½ onion, chopped	1 tbsp. egg white
1¼ tsp. salt	½ tsp. flour
2 apulid, cut into strips	

Add $\frac{1}{4}$ tsp. salt, pepper, flour and egg white to the pork and mix all these together. Add 3 strips of apulid and form into balls. Put aside until ready to cook.

Sauté onion and corn; add water. Let it boil for 10 minutes. Then drop the balls one by one. Let boil and add the rest of the salt. Cook for another 10 minutes. Serve hot.

CORN LUMPIA

1 cupful corn (scrapped)	$\frac{1}{4}$ tsp. salt
$1\frac{1}{2}$ cup shrimps (boiled and cut into halves)	$\frac{1}{8}$ tsp. pepper
1 onion	$1\frac{1}{2}$ c. water of broth
1 tbsp. lard	5 leaves lettuce
1 tsp. toyo	5 lumpia wrappers
	Lumpia Sauce

Sauté onion, shrimps, corn, salt and toyo. Season with pepper. Add water and bring to a boil until dry. Pour on a plate and cool.

Wrap 2 tablespoonfuls in lumpia wrapper with lettuce. Arrange on a platter and serve with lumpia sauce.

CORN OMELET

2 crabs (boiled and flaked)	1 tsp. toyo
1 cup corn scraped	$\frac{1}{4}$ c. lard
1 onion sliced	$2\frac{1}{2}$ c. water
2 eggs, beaten	$\frac{1}{8}$ tsp. pepper
	$\frac{1}{2}$ tsp. salt

Sauté onion, corn, toyo and salt. Add water. Cook until corn is tender. Add crab and keep on stirring until no broth is left. Pour the corn mixture in the beaten egg and cook in hot omelet pan. Serve with catsup as desired.

RICE AND CORN CONTEST

Nov. 29, 1959

The following rice and corn recipes were the entries of a contest among RIC held on the occasion of the birth anniversary celebration and unveiling of the marker of Maria Y. Orosa.

CORN A-LA-MODE

2 cups corn meal boiled	¼ cup shrimp juice
¼ cup boiled, shelled shrimps	1 teaspoon baking powder
2 eggs	Enough lard for frying
1 teaspoon salt	

Mix the milk with the shrimp juice. Set aside. Mix all dry ingredients except the shelled shrimps. Drop the eggs and mix thoroughly. Lastly pour the liquid and stir well.

Heat the fat and drop by spoonfuls taking care that 3 pieces of shrimps are inserted in the middle.

Fry till light brown. Serve hot with any sauce.

Mrs. ROSABELLA AGUILAR

FRUIT "PUTO"

2 cups rice galapong (rice batter)	Any quantity of the following:
⅓ cup sugar	Candied condol
2 tbsp. melted margarine	Fresh nanka
1 egg	Pineapple
	Chopped toasted casuy nuts
1 baking powder	

Soak 1½ cups washed rice with 1¼ cups water overnight. The next morning, grind this in a stone or meal grinder. This will make 2 cups of "galapong" or rice batter.

Mix the sugar, margarine, egg, baking powder with the "galapong" thoroughly. Pour this batter mixture on tin individual molds. Garnish the top with the finely sliced candied condol, fresh nanka, pineapple and chopped toasted casuy nuts.

Steam for 25 minutes. Remove from the mold and serve.

MARIA QUINTOS

PLAIN RICE CAKE A-LA-BARRIO

2 cups galapong (mixture of 1 2 mature coconuts shredded (ex-

* Agricultural Training Institute (formerly BAEX) conducts contest on rice since 1959 up to present. For inquiries, visit Specialist Service Division, Farming Systems Development Section.

- | | |
|---|--|
| cup rice soaked in 1 cup water
and ground) | tract 4 cups milk diluted with
water) |
| 1 tsp. salt | 2 pieces panucha (regular size) |

Mix the galapong with the salt. Melt the panutsa in the coconut milk. Heat the carajay. Brush with lard. Drop the galapong by spoonfuls in the carajay and cover to cook. Invert to cook the other side of the cake as in hot cokes. When done, drop the cake into the coconut milk syrup. (Coco milk with panutsa dissolved) Serve in a saucer deep enough for the syrup and the cake.

Mrs. GUADALUPE VELOSO

OYSTER ARROZ CALDO

- | | |
|----------------------|---------------|
| ½ cup rice | 5 calamansi |
| 1 tbsp. ginger juice | 1 head garlic |
| ½ tsp. black pepper | 4 tbsp. lard |
| 3 tbsp. patis | |

Boil ½ cup rice into 4 cups cold water. When done, set aside. Saute garlic in hot lard (4 tbsp.) add ginger juice boiled rice with the broth then boil again. Lastly add the oyster and season it with patis and black powdered pepper. Serve hot accompanied with calamansi.

MARIA CRUZ

CORN GULAMAN IN EGG SHELL

- | | |
|----------------------------------|--|
| 3 strips of native white gulaman | ½ cup corn water (from boiled
corn) |
| 1 cup water | 1 cup finely scrapped boiled
corn |
| 1 small can evaporated milk | |
| 1 ⅓ cups sugar | |

Wash the gulaman. Mix together the water, sugar and corn water in a saucepan, and bring to a boil. When the gulaman has dissolved, strain through a cheese-cloth. Pour the milk into the mixture, add the corn and mix very well. Fill up 18-19 egg shells three-fourth full. Set aside to mold.

When set, break the eggshells and invert the gulaman in individual saucers or platter and serve.

Mrs. PRAXEDES SUASI, First Prize

RICE TIMBALES

- | | |
|---|--------------------------------|
| 3 cups boiled rice, cooled | 3 eggs (2 beaten, 1 boiled) |
| ½ cup red and green sweet pep-
per, finely diced | 2 tomatoes medium sized, diced |
| ½ cup small shrimps (alamang) | 1 small onion, diced |
| | 1 cup camote tops, blanched |

or chopped shrimps	1/2 cup ground pork
1 tbsp. calamansi juice	2 segments garlic, minced
1 tbsp. butter	1 tbsp. lard
1/2 cup sliced boiled beans (habichuelas, boiled with 1 tbsp. sugar and tsp. salt.	A pinch of black pepper
	2 tsp. salt

Saute' the garlic in fat. Put the tomatoes and then the onions. Let it simmer until thick enough. Add the ground meat and cook. Set aside.

To the boiled rice mix 2 well beaten eggs with the salt and pepper. Divide the boiled rice into 4 parts and set aside.

Grease a baking dish or a loaf pan and spread one portion of the rice evenly making a layer on the bottom. On top of this layer, put the sweet pepper mixed with the alamang or shrimp with the calamansi juice and salt.

On top of the shrimp layer, spread the second portion of the rice. On top of this layer, put the beans.

Spread the third portion of the rice on top of the beans. Put the sauted meat over this rice.

The fourth portion of the rice will not be laid over the ground meat layer. Brush the top with butter and bake the dish in a moderate Orosa Palayok Oven, from 15-20 minutes. When done, remove from the oven and invert on a platter.

Garnish with the blanched camote tops seasoned with a pinch of salt. Arrange the slices of boiled egg around.

Mrs. LOURDES R. GUTIERREZ

CORN ALMON DE GAS — Young Corn

2 cups boiled young corn (drain)	2 regular size sweet pepper (red and green chopped)
1/2 cup ground meat	1/2 tsp. finely powdered pepper (black)
2 tsp. salt	2 eggs
1/4 cup finely cut green onion	Enough flour for rolling
1 head onion (chopped fine)	Enough lard for frying
1 head chopped garlic	

Mix all ingredients above except the lard. Make into ball good for serving.

Heat lard. Fry the rolled balls of corn in deep hot fat until brown or well done. Drain.

Arrange in bed of lettuce. Serve with tomato sauce or catchup.

Mrs. AMPARO SANTOS

RICE ROLL SPECIAL

1 cup rice, boiled	1½ cups boiled diced pork or chicken, shrimp and fish
½ cup malagkit, boiled	1 red sweet pepper, cut into strips
1 teaspoon salt	½ raw egg
1 tablespoon shortening or any cooking oil	Toyo and pepper to taste
1 teaspoon macerated garlic	½ raw egg cut into strips
3 tablespoons diced onion	
½ cup chopped tomatoes	

Sauté garlic, onion and tomatoes very well; and add diced pork, pepper and season to taste. Cook for a few minutes. Remove from fire. Add egg and mix well.

Spread rice on banana leaves. Place the meat filling at the center with strips of peppers arranged parallel with the mixture and make a roll such that the meat stays in the middle.

Tighten the roll with banana leaf. When it is formed, remove the leaf before serving. Slice to any desired thickness, crosswise and serve.

Miss PURIFICACION MAGSAMBOL

RICE-PINEAPPLE UPSIDE DOWN CAKE

A.

- ⅓ cupful margarine
- 1 small can sliced pineapple

- ¾ cupful brown sugar
- ⅓ cupful boiled rice

B.

- ½ cupful margarine
- 1 egg
- 1 teaspoonful calamansi juice
- ¼ cupful cornstarch
- 1 teaspoonful salt

- 1 teaspoonful orange extract
- ⅓ cupful evaporated milk
- ½ cupful flour
- 3 teaspoonful baking powder
- 1 tsp. vanilla

1 cupful white sugar

A. — Melt first one third cupful of margarine in a cake pan. Add brown sugar at the bottom of cake pan. Arrange drained pineapple and boiled rice. Set aside.

B. — Cream the second one third cupful of margarine. Add sugar gradually. When creamy beat in egg. Combine milk, pineapple syrup, calamansi juice, and orange juice.

Sift dry ingredients together and add alternately with the liquid, beating well after each addition. Pour into preserved cake pan with the pineapple. Bake in an oven 350° F from 40 to 50 minutes.

Invert from the pan to a cake plate and serve.

Mrs. ELENA ANTE

RICE-CORN A-LA-FILIPINA

150 pieces of halaan	1½ chupas of malagkit
2 regular-sized diced potatoes	(glutinous rice)
2 red peppers, sliced	1 coconut, shredded
(1 for garnishing)	(add 6 cups of water to
5 segments of garlic, minced	extract the milk)
2 small onions, chopped	3 tbsp. patis
6 ears of corn, grated	2 tsp. of shortening

Boil and shell the halaan (clam). With 2 tsp. shortening, saute the minced garlic and add the chopped onions. Then mix the scrapped corn, boiled garbanzos and the diced potatoes. When cooked, pour in the coconut milk. Stir until it boils, then add the strips of red peppers when the washed malagkit is cooked. Remove from the fire and serve on a platter. Garnish with strips of pepper and serve.

CELESTINA MANAHAN

CORN VALENCIANA FILIPINA

2 c. corn ground	2 tbsp. lard (pork)
1 c crab meat	1 c. coco milk
2 pcs. red and green pepper	1 tsp. patis
1 onion bulb	4 small tomatoes (salt to
1 segment garlic	taste)

Cook corn in 3 cups water. Sauté garlic in hot fat, onions and tomatoes for five minutes, add strips of red and green pepper. Add the coco milk. Boil for one minute. Drop crab meat; let boil, then add cook red corn, patis and salt to taste. Arrange in platter and serve. (Good for 6 persons)

Mrs. APOLONIA ROJO

MOLDED CORN

1 cup grated young mais	2 tbsp. sugar
½ cup coconut milk	1 tbsp. lard

Boil coconut milk, add the grated mais. Continue to boil till thoroughly cooked. Add sugar. To prevent from sticking, add lard. Mix well and mold in cups. Remove from the molds and serve cold.

BEATRIX ESTONILIO

CORNBURGER

8 ears of young yellow corn,	2 tbsp. water
grated	1 tbsp. cornstarch
¼ kilo shrimps, chopped	½ head of garlic, minced

1 egg
¼ tsp. salt
¼ tsp. pepper

1 onion, finely chopped
A few onion leaves, chopped
Oil for frying

½ tsp. sugar

Grate the corn, mix all ingredients thoroughly. Fry by spoonfuls in hot cooking oil. Remove when done and serve. This can be served with tomato catchup or mafran sauce.

Mrs. V. S. ROLDAN

CORN LOAF

½ can corned beef
1 can peas
1 box raisins
2 tbsp. flour
6 fried bananas
2 segments garlic, minced
Salt to taste

3 cups corn kernel (cooked)
2 eggs
3 cups cooked rice
2 tbsp. lard
2 tomatoes, diced
1 onion, diced
2 red peppers, sliced

Sauté, garlic, onions, tomatoes. Add corned beef, corn and salt. Add the peas and raisins. Put vetsin and diced red pepper.

Arrange this mixture in the middle of a platter. Put molded rice along the sides. Between the rice molds, arrange fried bananas. On top of the corn mixture, put the two fried eggs. Serve.

Mrs. CATALINE ASUZAR

YOUNG CORN WITH MALUNGGAY

3 cups scrapped young corn
3 cups corn kernel
¾ cup shrimps (shelled)
shrimp stock

3 cups corn kernel (cooked)
1 tbsp. patis
1 cup malunggay
2 tbsp. lard

Grate corn from cobs, dice the pork and shell the shrimps. Set aside. Put 2 tablespoons lard in a frying pan, heat. Sauté the garlic, then add patis when golden brown. Drop the pork and shrimps. Let boil for 10 minutes, then add the corn. Put to boil for another five minutes adding the shrimp stock and stirring at intervals to prevent from sticking. Let boil for another 10 minutes. Add patis to taste, then drop the malunggay leaves. Remove from the fire and serve.

Mrs. AURORA S. CUNANAN

RICE LA CUBANA TAGALA

2 cups boiled rice
4 tbsp. lard

1 regular size pepper (sweet
green and red)

- | | |
|----------------------------------|--|
| 2 tsp. salt | ½ cup shell shrimps |
| ½ cup ground meat (pork or beef) | ½ tsp. black powder pepper |
| 2 heads of garlic | ½ cup tomatoes sauce or 6 chopped regular tomatoes |
| 1 small box raisin | ¼ cup green onion. |

Sauté garlic, onions, tomatoes or sauce and ground meat. Add boiled rice, salt pepper and shelled boiled shrimps. When done add the red and green sweet pepper raisin and finally put green onion leaves. Heat enough until done. Mold in cups and serve on green lettuce leaves. Decorate with the rest of the shrimp, red and green pepper. Serve while hot.

JUANITA RIVERA

RICE — CORN LUGLOG

- | | |
|--|---|
| 2 cups boiled corn, grated | 2 tbsp. sliced green onion |
| ¼ kilo fine bihon (blanched 5 minutes and drained) | ¼ cup cornstarch mixed with one cup water |
| ¼ cup lard (fresh pork fat) | ¼ cup pounded chicharon |
| 5 pieces tinapa (minced) | 1 cup shrimp juice |
| ¼ kilo dried boiled pork | 2 tbsp. patis |
| ¼ sliced boiled shrimps | 2 hard boiled eggs, sliced cross-wise |
| 1 cake diced tokua | ¼ cup achuete |
| ½ crushed garlic | |

A pinch of pepper

Sauté the garlic in 4 tbsp. fat. Pour the achuete water and bring to a boil. Add the shrimp juice and continue to boil. Then put the pork, shrimp, celery, tokua and season to taste. Lastly, add the cornstarch diluted with water. Boil and stir well until thick or until sauce consistency is reached.

Arrange ¼ cup corn and ½ cup bihon on a platter. Put sauce on top. Garnish with the tinapa, chicharon and the green onion.

Serve with patis and calamansi and more pepper if desired.

Mrs. AGAPITA HIPOLITO

PINIPIG — CORN DELIGHT

- | | |
|--|---|
| 2 cups pinipig | 3 tbsp. melted butter |
| 1 cup finely grated, boiled or canned corn | 3 egg yolks |
| 1 cup condensed milk | 1 tsp. strawberry extract a pinch of salt |
| | Enough sugar to serve with |

Moisten the pinipig with enough water to make it soft. Beat the egg yolks and set aside a little for topping.

Mix the milk, butter and salt with the egg yolks. Add the pinipig and corn and mix thoroughly.

Grease a baking pan. Pour the mixture in the greased pan and bake in moderate oven for 40 minutes.

When half done, brush the top with the remaining egg and sprinkle with sugar. Bake until brown.

Mrs. EMILIANA S. ARAGON

CORN PASTEL

- | | |
|-------------------------------------|--------------------------|
| 1 cup diced celery | 1½ cups milk |
| 1 tbsp. chopped green onion | 4 hard boiled eggs |
| 2 cups corn from the cob,
grated | Salt and pepper to taste |
| | Pastry |
| 2 tbsps butter or margarine | |

Celery and corn make a good combination but if celery is not available, use sweet green ball peppers instead.

Shell and chop the hard boiled eggs. Mix thoroughly with all the other ingredients and place in well-greased casserole. Do it with butter. Cover the casserole with a crust made of the following pasty:

Mix 1 cup flour, ⅓ cup butter or lard and ¼ cold water. Knead and roll. Fit over the casserole. Make slits on the top to allow steam to escape. Bake in a hot oven for 25 minutes or until pastry is golden brown.

Mrs. BETTY MONTE

CORN TAMALES

- | | |
|----------------------------------|---------------------------|
| 1 cup corn meal | 2 segments garlic, minced |
| 3 cups coconut milk | ½ teaspoon black pepper |
| ½ cup pork cut into small pieces | 1 tbsp. toyo |
| ½ cup shrimps | 1 tbsp. patis |
| 1 boiled egg | ¼ tsp. salt |
| 1 tbsp. shortening | 2 tbsp. achuete liquid |
| 1 small onion | |

Boil the pork in a little water and cook until brown. Put aside. Sauté the garlic, add the onions, then the shrimps and the pork. Add a little salt and pepper to taste. When cooked, separate half the ingredients in a container for garnishing leaving the remaining half in the pan.

Meanwhile, add a little water to the corn meal to make a thick paste. Pour this paste gradually to the boiling mixture in the pan stirring constantly. Add the remaining toyo. Mold in muffin pans and cool. Garnish with the rest of the ingredients set aside, and the sliced boiled egg. Serves 12.

Mrs. ELVIRA S. MACASPAC
Honorable Mention

CORN CROQUETTES

½ can corned beef	½ small onion
2 cups corn	Flour two tbsps,
2 eggs	Pepper to taste
2 cups cooked whole kernel corn	Fat for frying
6 stalks celery	

Mash corned beef and corn together with the flour and two well-beaten eggs. Cut the onions and celery into small pieces and add to the mixture. Season with pepper.

Fry in deep, hot fat and serve hot together with catsup or vinegar and garlic.

Mrs. JULIETA ACUZAR

CORNCHI SALAD

1 cup canned mushrooms (optional)	1 cup mayonnaise
1 can pineapple tidbits	1 red and 1 green sweet pepper
1 cup boiled, chopped chicken meat	3 hard boiled eggs for garnishing
2 cups pinipig	6 lettuce leaves for bed or base
½ strip gelatin	Salt and pepper to taste as desired

First boil the chicken in enough water. When cooked, flake and chop. Then cut the mushrooms into fine slices and fry in 2 tablespoonfuls of margarine. When done, remove from the fire and set aside.

Blanch in boiling water the red and green pepper and cut into cubes. Remove the juice from the pineapple. When the ingredients are prepared, mix them all including the corn kernels with 1 cupful of mayonnaise until well blended. Season with fine salt and pepper as desired.

Make a bed of lettuce leaves, put the mixed salad and garnish with hard boiled eggs cut into quarters. Pineapple tidbits, red pepper, and corn kernels can also be used for decorations.

When everything has been finished, cover with wax paper and place in the refrigerator or ice box and serve cold.

Mrs. CATALINA ALZONA
Second Prize Winner

FRESH CORN LUMPIA

2 cups corn, canned or boiled and grated	2 tbsp. patis
1 cup sincamas, cut into strips	4 tbsp. lard
1 cup upo, cut into strips	4 head garlic, mixed
¼ kilo pork, diced	1 small onion, sliced
2 cakes tokua, diced	15 lumpia wrappers
¼ cup native celery, cut into pieces	3 heads lettuce
	A dash of pper to taste
	2 tbsp. soy sauce

Boil the pork in a small amount of water. Dice and separate the fat. Fry the fat. Fry the tokua. Set aside.

Sauté the garlic, add the onions. Put the shrimps and fried tokua, meanwhile stirring with the shrimp juice until it boils. Then add the corn, sincamas and upo. When done, add the celery and then the seasoning.

Put on a collander to drain. Wrap with lumpia wrapper, garnish with a lettuce leaf and serve with lumpia sauce. Sauce: 1 cup water; 1 tsp. salt; 2 tbsp. soy sauce; 2 tbsp. starch and ¼ sugar.

Mix all the ingredients together and allow to boil until it reaches sauce consistency. Serve with the lumpia.

Miss CLAUDIA HERRERA

PINIPIG CORN DELIGHT

2 cups pinipig	3 egg yolks
1 cup cooked young corn finely chopped	3 tbsp. butter melted
1 cup condensed milk	1 tsp. strawberry extract
	A pinch of salt

Moisten the pinipig with little water enough to make it soft, beat the egg yolks, (set aside a little for topping) add the milk, butter and salt. Mix pinipig and corn, pour in the egg mixture and the strawberry extract. Mix all ingredients thoroughly, pour it in greased baking pan. Bake in moderate oven for about 40 minutes.

When half done brush the top with remaining egg yolk and a little sugar. Bake until done.

Mrs. EMELIANA S. ARAGON

CORN WITH TALINUM

- | | |
|-------------------------------|-----------------------|
| 1 cup grated young corn | 2 cups shrimp stock |
| 20 shrimps, shelled and diced | Lard |
| 1 small onion, sliced | 2 cups Talinum leaves |
| 3 segments garlic, minced | Patis to taste |

Sauté the garlic, add onions and then shrimps. Pour the patis, add the corn and the shrimp stock. Let it boil for about 15 minutes, or until corn is cooked. When done, add the talinum and boil for three minutes more. Remove from the fire and serve while hot.

CONCEPCION DE LA VEGA

CORN SOUP

- | | |
|---|------------------------|
| 1 chicken boiled (reserve the broth and use as liquid for the soup) | 1 garlic, minced |
| 1 onion sliced | 2 cups corn, grated |
| | 1 can milk, evaporated |
| | 2 tbsps. margarine |

Cook chicken until tender. When done, remove the bones and cut the chicken meat into small pieces. Strain the broth.

Sauté garlic and onion in the margarine. Add the chicken meat and the broth. When it is boiling, add the corn. Put vetsin and when cooked add the milk and continue stirring.

Serve hot.

Mrs. ELVIRA PATRO

COCO RICE

- | | |
|-------------------|--------------|
| 1 c. rice | ½ tsp. salt. |
| 2 c. coconut milk | |

Boil the coconut milk. Add the mashed rice and salt. Continue boiling to cook. Serve hot.

BEATRICE ESTONILLO

SWEET POPPED RICE

- | | |
|------------------|-------------|
| 1 cup dried rice | 2 panuchas |
| ½ cup lard | ½ cup water |

Heat ½ cup of lard in a frying pan, add the rice little by little until it is toasted. Drain and set aside.

Break the panutsa in water and boil until thick. Drop the toasted rice and stir thoroughly until thick enough to mold into desired shape. Let cool and serve.

Mrs. ELSIE MAGNO

CORN RICE VALENCIANA

1 cup boiled rice	1 clove garlic, bruished
1 small chicken	4 tbsp lard
1 onion chopped	2 chorizos
1 bay leaf	2 fresh green and red pepper (cut into strips)
1 can tomato sauce	2 stalks green onions
1 small can peas	2 tbsp. paminton (paprika)
2 hard boiled eggs	
1 cup cooked corn	

Cut the chicken at the joints. Sauté the garlic and onions in 2 tbsp. lard. Add the chicken, cover and cook for 20 minutes. Add the sausage, bay leaf, paminton, tomato sauce and the green and red pepper. Add the boiled rice, corn and peas. Season with pepper and salt to taste. Cover and cook in a very low fire for 10 minutes adding extra 2 tbsp. lard to keep the rice from sticking. Transfer to a platter and garnish with finely sliced green onions, hard boiled eggs, and red and green pepper rings.

Mrs. ROSITA SOBREPENA

MAIS PATTIES

8 ears of yellow corn (young)	2 tbsp. water
¼ kilo shrimps (chopped)	1 tbsp. cornstarch
1 egg	½ head of garlic sliced fine
¼ tsp. salt	1 onion (finely chopped)
¼ tsp. pepper	A few onion leaves, chopped
½ tsp. sugar	Oil for frying

Scrap corn very fine. Mix all ingredients. Fry by spoonful in hot cooking oil.

Mrs. V. S. ROLDAN

CORN MARUYA

1 cup fresh, grated young corn	1 egg, beaten
½ cup flour	Salt and pepper to taste
½ teaspoon baking powder	Fat for frying

Heat eggs, add flour, baking powder and seasoning. Add the corn and mix well.

Heat plenty of fat in a deep frying pan or carajay. Drop by spoonfuls the corn mixture into the hot fat without spattering. Cook until delicately brown and drain on crumpled clean absorbent paper. Serve hot.

To turn this dish into ukoy, add small raw shrimps and chopped green onion leaves into the mixture before cooking.

Mrs. BETTY MONTE

RICE A-LA-TAGALA

2 cups boiled rice	1 medium-sized onion, diced
4 tbsp. lard	2 tsp. salt
½ cup ground meat (pork or beef)	2 segments garlic, minced
1 small box raisins	2 sweet peppers (red and green), diced
½ cup shelled shrimps	¼ cup green onion, finely sliced
½ cup tomato sauce or 6 chopped regular-sized tomatoes	A pinch of black pepper.

Sauté the garlic. Drop the onions, then the tomatoes or sauce. Simmer until thick. Add the ground pork to cook. Put the boiled rice, shrimps and the salt and pepper to taste. (Leave some of the shelled shrimps and pepper for garnishing.) When done, add the sweet pepper raisins and lastly the green onion. Cook until done.

Mold with the use of a cup and serve on a leaf of lettuce. Garnish with shrimps and pepper. Serve while hot.

JOSEFA RIVERA

CORN CUSTARD

CUSTARD

2 cups corn meal
3 cups water
1½ cups sugar

GELATIN

1 cup water
½ strip gelatin

1 lemon rind (grated)
1 cup evaporated milk
5 egg yolks

SYRUP

½ cup brown sugar
½ cup water

Soak corn meal in water for 5 minutes. Strain through a wire sieve to get the corn meal extract. Set aside.

Cream the egg yolks and sugar together. Add the milk little by little and then the corn extract. Drop the lemon rind in the mixture. Cook in a pan and stir until thick.

Boil the water and the gelatin together. Strain through the sieve into the corn meal mixture. Allow it to blend very well and pour into a 6-inch round tin mold to set.

Cook the sugar and water until it forms into a thick syrup.

Loosen the custard from the pan and invert it on a platter. Pour syrup on top and serve.

Mrs. ESTELA GATDULA

Chapter XIII

CASSAVA RECIPES *



CASSAVA CROQUETTES

- | | |
|---|---------------------------------------|
| 1 cup mashed boiled cassava | 2 tablespoons coconut milk to moisten |
| $\frac{1}{3}$ cup boiled, flaked fish or crab, chopped pork or beef | Salt and pepper to taste |

Mix all ingredients and form into balls. Roll in flour and fry in hot fat.

CASSAVA SALAD

- | | |
|---|--|
| 2 cups boiled cassava, cut in cubes | $\frac{1}{2}$ cup carrots, boiled and cut in cubes |
| $\frac{1}{2}$ cup string beans, boiled and cut in cubes | $\frac{1}{3}$ cup mayonnaise dressing
French dressing |

Marinate vegetables separately in French dressing for $\frac{1}{2}$ hour. Drain. Mix with mayonnaise and serve on a bed of greens.

CASSAVA BIBINGKA

- | | |
|--|---------------------------------|
| 1 cup grated fresh cassava | 2 eggs |
| $\frac{1}{2}$ cup scraped "buko" (young coconut) | 3 tablespoons melted shortening |
| $\frac{1}{2}$ cup pure coconut milk | 4 tablespoons grated cheese |
| | $\frac{3}{4}$ cup sugar |

* From the files of Rosa Buenaluz

Beat eggs, add sugar, melted butter and coconut milk. Mix in cassava and young coconut. Add 2 tablespoons cheese and mix well. Line a round pan with banana leaves and pour in the mixture. Bake in moderate palayok-oven. When almost brown, brush with butter, and sprinkle top with a little sugar and remaining cheese and bake further until golden brown.

CASSAVA SUMAN

1 cup grated cassava	$\frac{3}{4}$ cup sugar
$\frac{1}{2}$ cup grated and chopped coconut	Banana leaves

Mix all ingredients and wrap mixture in banana leaves to size desired. Tie by twos with string. Boil in water until done.

PLAIN CASSAVA PUDDING

$\frac{1}{2}$ cup grated fresh cassava	4 tablespoons sugar
$\frac{1}{4}$ cup coconut milk	1 egg
$\frac{1}{4}$ cup coconut milk	$\frac{1}{4}$ cup dried rimas

Beat egg, add sugar, milk and grated cassava. Add raisins. Pour mixture on a greased pan and bake in palayok-oven 15 minutes.

CASSAVA ROLLS

$1\frac{1}{4}$ cups cassava flour	$\frac{1}{3}$ teaspoon sugar
$1\frac{1}{4}$ cups wheat flour	$\frac{1}{2}$ teaspoon salt
2 eggs	3 tablespoons milk
10 grams Fleischmann's yeast (2 teaspoons)	2 tablespoon melted butter
	3 tablespoons sugar
$\frac{1}{4}$ cup warm water	

Dissolve yeast in water. Add $\frac{1}{3}$ teaspoon sugar, salt, milk, beaten eggs, and melted butter. Add the remaining 3 tablespoons sugar, cassava flour, and mix well. Add wheat flour and knead on floured board until smooth. Roll out to an elongated form and divide into 8 parts. Form into round balls to the shape of wedding rolls. Place on buttered pan and let rise until doubled in volume. Bake in a hot palayok-oven for 7 minutes. Brush top with egg yolk before it browns and bake until brown. Remove from oven and brush while hot with melted butter.

COCO-CASSAVA HOT CAKE

1 cup cocomeal	1 teaspoon salt
1 cup Cassava flour	2 tablespoons sugar
1 cup water	2 tablespoons melted purico or

½ cup milk	butter
2 eggs	2 teaspoons sugar
	4 teaspoons baking powder

Beat eggs, add sugar, salt, milk, purico, water and mix well. Then add the sifted flour, cocomeal, and baking powder.

Grease a hot frying pan and drop the dough from a spoon. When the dough bubbles and shows holes, turn pancake upside down to brown the other side. Remove from pan. Serve with coco honey or syrup and butter.

COCO-CASSAVA-MONGO PATTIES

½ cup cocomeal (dried "sapal")	4 tablespoons bagoong juice
½ cup cassava flour	3 tablespoons lard
½ cup mongo, boiled and mashed	

Mix cocomeal, cassava flour, and mongo. Add *bagoong* and lard, and work with fingers. Roll out to a thin sheet and cut to desired shape and size. Bake in moderate palayok-oven until done.

COCO-CASSAVA MOLASSES SQUARES

½ cup cocomeal	6 tablespoons molasses
½ cup cassava flour	

Mix the above ingredients very well. Roll out to a thin sheet. Cut into desired shapes and bake or dry under the sun.

MONGO-CASSAVA PATTIES

¼ cup cassava flour	5 tablespoons sugar
6 tablespoons mongo, boiled and mashed	4 tablespoons water

Mix well the cocomeal and mongo. Add sugar and water and work with fingers. Roll out to a thin sheet and cut into 1 inch squares. Bake in moderate oven or dry under the sun.

COCOMEAL CRACKER

1 cup cocomeal, roasted	½ cup casava flour
¼ cup hevi (dried shrimp) pounded	2 tablespoons <i>tahuri</i> diluted
	3 tablespoons water

Sift flour, cocomeal and powdered *hevi* together. Add *tahuri* water, and mix well. Work dough with fingers. Roll out to a thin sheet and cut in squares. Dry in very low oven until crisp. Keep in dry bottles.

Fry in deep hot fat before serving.

MIXED CASSAVA SALAD IN ASPIC

½ cup boiled carrot, diced	2 cups boiled cassava diced
¼ cup boiled sugar beets, diced	½ cup celery, diced
½ cup string beans, blanched diced	1 cup sweet corn (in can)

Boil 1 gulaman with 1 cup water.

Marinate the cut vegetables with French dressing. Drain well and add mayonnaise. Line a mold with gulaman and pack salad. Pour gulaman along the sides. Chill.

FISH FILLET

Clean fish fillet and sprinkle with salt, pepper, a little lemon juice. Roll fillets in beaten egg and cassava flour. Fry in deep fat until nicely browned.

CASSAVA CREAM SOUP

5 cups cassava stock (liquid of boiled cassava)	1 cup coconut milk
⅔ cup mashed cassava	1 boiled egg (chopped)
	Salt to taste

Boil the cassava stock with the mashed cassava and add salt to taste. Add coconut milk and let it boil. Remove from the fire; add chopped boiled egg. Serve hot.

CASSAVA BOLA-BOLA

2 cups mashed cassava	1 tablespoon salt
⅓ cup flaked fish	

Mix mashed cassava and flaked fish. Add salt and mix thoroughly. Shape into balls; roll in flour and fry in deep hot fat until golden brown. Garnish with greens or vegetables soaked with a little salt, sugar and vinegar.

CASSAVA SALAD

3 cups boiled cassava, diced	1 tablespoon salt
	⅓ cup egg sauce

Mix boiled cassava and the egg sauce thoroughly.

EGG SAUCE

Mash egg yolks. Add vinegar and salt; add enough cassava stock to make a smooth paste.

Chapter XIII

MAIN DISHES



EGG-IN-NEST

- | | |
|---|----------------------|
| 4 balls No. 20 thread for tying | 2 calamansi (juice) |
| 1 kilo pork meat—remove skin
and make it to thin tapa form
longitudinally in size | 1 tbsp. toyo |
| 1 tsp. salt | ½ c. lard for frying |
| ½ tsp. pepper (black powder) | 1 bay leaf |
| | 2 heads onion |
| | ½ c. wine |

Mix altogether and spread on the tapa pork all around.
Set aside.

Boil 6 eggs. Cool and remove shell. Wash in cold water. Drain. Take one each time and wrap enough tapa covering the egg. Tie around. Fry in small amount of lard until brown. To the left over lard add enough water, put in a casserole and add the fried meat with two onions cut to halves, bay leaf and the wine. Cover and boil until tender. Cool and cut to halves. Place on top of the fried potato. Garnish with red pimientos and the sauce.

SAUCE

Place 2 tbsp. lard in a frying pan. Add 2 tbsp. cornstarch then mix well adding left over broth wherein the meat was softened. Place in a sauce bowl. Serve to the egg nest.

MEAT PATTIES

- | | |
|--------------------|---------------------------------------|
| ½ kilo ground meat | 1 calamansi |
| 1 egg | 4 stalks green onions cut very finely |
| 2 tablespoon flour | ¼ teaspoon pepper |
| 1 onion diced | 2 spoonfuls soy sauce |

Mix all ingredients and make into balls. Flatten them, Fry until brown.

PAKSIW PATA

- | | |
|-------------------|--------------------|
| 1 whole pata | ¼ tsp. pepper |
| 4 heads of garlic | 1 small bay leaf |
| ½ cup vinegar | 3 stems of oregano |
| 1 teaspoon salt | 1 tbsp. sugar |

Clean and cut legs into pieces. Place in a pan $\frac{1}{3}$ filled with water. Put all the ingredients, cover and cook until tender.

KULA'O (Head of pig)

- | | |
|-------------------------|--------------------------|
| ½ head of pig (cleaned) | 1 head of garlic crushed |
| ½ c. vinegar | 1 onion, minced |
| 1 tablespoon salt | 2 c. water |
| ¼ black pepper powdered | |

Cook head of pig in water in slow fire until tender. Remove pork from bones and slice thinly. Dip in following sauce before eating. Kilawin sauce — Mix vinegar salt, black pepper, onion, garlic and $\frac{1}{3}$ c. of water.

PORK ADOBO

- | | |
|---|---------------------------------|
| 1 kilo pork, cut to pieces of about 2 inches by 1½ inches | 1 teaspoon black pepper, ground |
| 1 head garlic, pounded | 1 tablespoon lard |
| 4 teaspoons salt | 2 cups water |
| | ½ cup vinegar (native) |

Place the pork in a saucepan. Add vinegar, garlic, pepper, salt, and water. Cover the saucepan and cook slowly until a small amount of soup is left, about $\frac{1}{4}$ cup. Drain: separate the pieces of garlic from the pork and fry in lard until brown. Add the pieces of pork and fry until brown. Add the soup and let simmer about 5 minutes. Serve hot.

To can:

Pack while boiling hot, seal hermetically using a hand can sealer and sterilize in No. 2 tall cans in the pressure cooker for 45 minutes at 20 lbs. pressure.

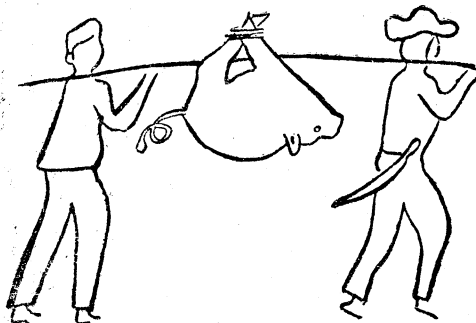
KILAWIN

- | | |
|---|-------------------------------|
| 1½ cups pig's liver, sliced to pieces
about 4 cm. long, 2 cm. wide,
and ¾ cm. thick | 4 tablespoons lard |
| 2 cups pork, sliced to pieces | 6 segments garlic, pounded |
| 1½ teaspoons black pepper corns,
pounded fine | 1 regular sized onion, sliced |
| | ½ cup vinegar, native |
| | 2 tablespoons salt |
| | ½ cup water |

Sauté the garlic in lard until light brown; add the onion, continue sauteing until the onion is done. Add the sliced liver, stirring the mixture for about 3 minutes, and pressing the pieces of liver with the back of a wooden spoon while frying. Add the pork and cook about 5 minutes stirring in the same manner while cooking. Season with pepper and salt; then add vinegar diluted with water. Let simmer for at least 15 minutes, or until the meat is tender and the mixture thickens.

To can:

Pack in cans while boiling hot, hermetically seal using a hand can sealer, and sterilize in number 2 tall cans for 30 minutes at 15 lbs. pressure.



DINUGUAN

- | | |
|---|--|
| 3 cups internal organs (heart,
liver, pancreas and meat with
fat) | 1 tablespoon salt (for seasoning
when sauteing) |
| 1½ cups blood | 1 small onion, cut to pieces |
| ½ cup vinegar mixed with 1 cup
water and 1 tablespoon salt | 3 segments garlic, pounded |
| | 2 hot peppers |
| | 3 tablespoons lard |
| | 3½ cups water |

Clean and cut internal organs to small pieces. Cook in a saucepan with the vinegar mixture for about 15 minutes. In

another saucepan, sauté garlic and onion. Add boiled internal organs and continue sauteing for 5 minutes. Add the blood little by little stirring the mixture while adding, and let boil. (Be sure to cut the coagulated blood to small pieces before adding). Add water, season with salt and cook covered until meat is tender. Place hot pepper just before removing from the fire. Keep covered and serve hot.

To can:

Pack in cans while boiling hot, seal hermetically using a hand can sealer and sterilize in number 2 tall cans 30 minutes at 15 lbs. pressure.

COCONUT GULAY

¾ cup tokua, cubed	1 cup patola, cubed
¾ cup potato, cut in 2-inch lengths	5 cups coconut milk
¾ cup squash tops, sorted	1 tablespoon lard
	1 tablespoon salt
	¼ cup camote, cubed

Fry pork in lard, add tokua and cook till light brown. Add squash, camote, salt and coconut milk. Boil and keep stirring. Add patola and squash tops, cooking 10 minutes longer or until vegetables are done.

BULANGLANG TOKUA

1 cup malungay leaves	1 cup tokua, cubed
1 cup patola, cubed	3 tablespoons tomatoes, sliced
1 cup upo, sliced	½ of one onion
1½ tablespoon bagoong alamang	1 cup rice washing

Mix tomatoes, onion, bagoong, squash in deep sauce pan or pot. Add rice washing and boil. After 5 minutes cooking, add tokua and upo. When upo is almost tender, add malungay and cook 2 minutes longer or until malungay leaves are wilted. Remove from fire.

QUICK SINIGANG

6 sapsap or bisugo fish	2 whole pieces hot pepper (green, native)
2 cups kangkong	
½ cup green sampaloc fruit (tamarind)	2 cups rice washing
	4 teaspoons salt
	3 tablespoons tomatoes, sliced

Boil sampaloc in second or third rice washing. When soft remove from pan and press well to get acid juice. Add juice to boiling rice washing. Add tomatoes, pepper, salt and kangkong

stem. Cook 2 minutes then drop in fish and kangkong leaves. Cook 3 minutes longer and serve.

LABORER'S SUKIYAKI

¾ cup beef meat and bone (cut in 2-inch lengths)	¾ cup green onion, native
1 cup pechay, shredded	1 cup cabbage, cut in squares
1½ cups bamboo shoot (labong) shredded and boiled	¼ toyo sauce
⅔ cup white tokua (soft), sliced	1 tablespoon lard
	4 teaspoons sugar
	3 cups beef bone stock

Boil beef bones with meat. When meat is tender slice to thin pieces. Heat the frying pan and grease with lard. Add tokua when lard is hot, and brown sides lightly. Add meat, vegetables, toyo and stock. Bring to boil, add sugar, and cook vegetables 5 minutes. Serve hot.

NOTE: Sukiyaki is served right off the pan and consequently must be cooked as it is eaten. If possible, uncooked vegetables or ingredients should be added one at a time as needed in the same broth.

FISH WITH AMPALAYA

2 cups flaked fish	1 cup tomatoes
2 segments garlic chopped fine	2 big-sized ampalaya, sliced crosswise
1 onion sliced thin	Salt to taste
4 tablespoons lard	

Sauté the garlic and onions and when half done add the tomatoes and cook for two minutes; then add the sliced ampalaya, stir well and cover. Cook over slow fire for ten minutes stirring occasionally to avoid burning. Add the flaked fish and season with salt. Continue cooking for five more minutes and remove from the fire. Serve hot.

STUFFED EGGPLANTS

2 cups flaked fish or ground meat	1 can tomatoes
8 eggplants, baked or roasted	6 tablespoons lard
3 segments garlic, chopped	4 eggs (raw)
1 onion sliced and chopped	Salt and pepper

Bake or roast the eggplants and peel.

Sauté the garlic and onions and when half done add the macerated tomatoes. Cook and stir for five minutes. Mix the flaked fish; season with enough salt and pepper. Beat one egg

and mix with the fish mixture. Stuff the eggplants with this mixture.

Beat the whites of three eggs add the yolks and two table-
spoons of flour. Season with salt. Dip in the stuffed eggplants
and fry in hot fat until brown. Serve hot.

FISH-PINEAPPLE SURPRISE

- | | |
|--------------------------|-----------------|
| 1 Bañgus, flaked | 1 egg |
| ½ cup bread crumbs | 1 can pineapple |
| Salt and pepper to taste | |

Flake the fish and mix with beaten egg and bread crumbs.
Season with salt and pepper. Form into thin cake and press a
well drained slice pineapple on each. Place on greased baking
pan in a moderate oven (350 F) for 20 to 25 minutes.



STUFFED CHICKEN

- | | |
|---|------------------------------|
| 1 large chicken | 6 egg yolks |
| 1 cup chopped, cooked ham | ½ cup raisins |
| 2 pieces of chorizo de Bilbao
sausage or | 4 hard-boiled eggs |
| 2 cans Vienna sausage
chopped | 8 tablespoons butter |
| ½ kilo pork meat,
round | ½ cup chopped olives |
| | ½ cup sweet mixed
pickles |
| | 3 calamansi fruits |

Dress and bone the chicken. Marinate with calamansi
juice, toyo and pepper the inside boned chicken. Mix ground
pork, ham sausage, and egg yolk. Add olives, raisins and sweet
mixed pickles. Mix all the ingredients and add butter. Stuff
the boned chicken with the mixture, sew up the opening. Wrap
the chicken with a clean wet cheese cloth. Boil in chicken
stock and cook until tender. Remove the cheese cloth and
brown in deep hot fat or in an oven. Serve with the thick-
ened gravy.

Chapter XIV

DELICACIES

BARQUILLOS

1¼ cups flour	⅓ cup sugar
1 tablespoon butter	3 egg yolks
2 cups milk	½ teaspoon vanilla
½ cup water	

Mix all ingredients and strain. Later cook in a barquillera which has been heated and greased. Pour 1 teaspoon at a time; when slightly brown, roll with a small stick and cool.

BANANA BETTY

4 bananas	¼ cup butter
1½ cups pinipeg (rice)	orange or lemon juice
¾ cup brown sugar	½ cup milk

Alternate layers of sliced bananas with crumbs in a pyrex baking dish. On top of each layer of bananas sprinkle brown sugar. Dot with butter. Sprinkle over a few drops of orange or lemon juice. Sprinkle whole rice pinipeg over top layer. Add enough milk to half fill pudding dish.

Cover. Bake 20-30 minutes to brown the top. Serve hot.

FROZEN BANANA SALAD

2 teaspoons vanilla extract	4 tablespoons crushed peaches
1 teaspoon salt	1 cup heavy cream
4 teaspoons mayonnaise	½ cup chopped walnuts
2 packages cream cheese	3 well ripened diced bananas
½ cup "papaya maraschinos" cut in quarters	Juice of 5 calamansi

Add calamansi juice and salt to mayonnaise and stir into cheese. Mix with the crushed pineapple, papaya maraschinos, nuts, and fold in whipped cream until firm. Add bananas. Turn into tray of automatic refrigerator and freeze 2 hours or longer. Unmold and cut in slices and serve on a bed of lettuce garnished with some of the maraschinos.

DALIA SPONGE CAKE

1¾ c. cake flour	9 eggs
2 tsp. baking powder	3 tsp. lemon juice diluted with
1½ c. sugar	water

Sift the flour once; measure and add the baking powder and sift three times. Set aside.

Separate the egg yolks from the whites. Beat the egg white, add ½ of the measured sugar. Beat until stiff but not dry. Beat the egg yolks, add the rest of the measured sugar, then the lemon juice. When lemon colored, add the beaten whites and continue beating until fluffly. Add the sifted flour. Mix well and pour in a well-greased cake pan. This will fill 2 pans. Bake in moderate oven from 10-15 minutes. Prepare butter icing. Ice the cake in the form of a dahlia flower.

BUTTER ICING

1 lb. butter	1 big can evaporated milk
2 c. sugar	

Cream the butter, add the sifted sugar. Continue creaming only in one direction; add the milk in small amounts until smooth and fine.

Spread smoothly over the cake or use a cake decorator. This is enough to ice two cakes.

MOCHA CAKE

1 c. butter	¾ cups diluted milk
2 c. sugar	2 tbsps. powdered coffee
8 eggs less 4 whites	4 tsps. baking powder
3½ c. flour	

Sift the flour, measure and add baking powder. Sift for three times.

Cream the butter, add the sugar; when creamy, beat the egg one at a time. Mix well; add the sifted flour alternately with milk. Dissolve the coffee in the cup of milk. Beat egg whites and fold into the butter mixture. Pour on well greased 9 inch pan. Bake in 375F. for 20-25 minutes.

BUTTER CAKE

3½ cups wheat flour	8 eggs
1 cup butter	1 cup diluted milk
2 cups sugar	1 tsp. baking powder

Sift the flour and measure. Mix and add baking powder. Sift three times.

Cream the butter, add sugar. When creamy, beat in the egg one at a time separating the whites. Cream well and when fine and fluffy, add the sifted flour with the baking powder alternately with milk. Set aside. Beat egg whites until stiff but not dry. Fold into the batter mixture. Pour in a well greased 9 inch baking pan. Bake in moderate oven 350 C for 20-25 minutes.

ANGEL CAKE

1¼ c. egg white or 8-10 whites	1 tsp. lemon rind
1 c. cake flour	1 tbs. lemon juice
1½ c. sugar	1¼ tsp. cream of tartar

Sift the dry ingredients. Measure the flour; add ½ cup sugar and sift three times. Set aside.

Beat the egg whites stiff but not dry, then add the rest of the sugar little by little. Add the cream of tartar, the rind and juice. Beat well until it stands in peaks; fold the sifted flour. Pour in an angel cake baking pan wet with water. Bake in a moderately slow oven 325 degrees F to 30 to 40 minutes.

FRUIT CAKE I

1 cup butter	1 c. brown sugar
8 eggs less 4 whites	¾ c. wine (any brand)
3½ c. mixed candied fruits	1 cup mix nuts:
Dice:	kasuy
red cherries	walnut
lemon peel	pecan
dates	pili
figs	3½ c. flour
ciron	⅓ tsp. nutmeg powder (can be omitted)
prunes	1 tsp. cinamon
raisin	4 tsp. baking powder
condol	
orange peel	

Measure dry ingredients and sift three times.

Cream the butter, add the sugar; then the eggs one at a time. Add the fruits, sprinkle with ¼ of the measured flour alternately with wine. Put flavoring, mix well. Pour in a well greased fruit cake pan; loaf pan preferably. Decorate top with glazed fruits. Bake in a moderate oven for 50 to 55 minutes. Invert when done; remove from pan and cool. Wrap nicely and pack.

FRUIT CAKE II

2½ cups glazed cake mix	1 tsp. nutmeg
1½ cups whole pili nuts, toasted	1 tsp. allspice
1 cup raisins (cut in half)	½ tsp. mace
1 cup raisins (whole)	1½ cups All Purpose Flour
½ cup fruit juice (orange or grape)	¼ tsp. Salt
½ cup dark molasses	¼ tsp. soda
3 tbsp. brandy or ¼ cup dark rum	½ cup butter or margarine
1 tsp. cinnamon	¾ cup brown sugar, firmly packed
	¼ cup whole Strawberry preserve

Combine fruit, nuts fruit juice, molasses, brandy and spices in a large bowl. Mix well and let stand while preparing batter.

Sift together, flour, salt and soda and stir into fruit mixture. Add strawberry preserve.

Cream butter and sugar until fluffy. Beat in eggs, one at a time. Fold in fruit-flour mixture.

Pack cake mixture firmly into two loaf pans which have been lined with waxed paper. Bake in preheated slow oven (300°) for about 1 hour and 15 minutes or until cake is done.

Cool thoroughly and wrap in aluminum foil, sealing tightly. Store in air-tight container.

CHOCOLATE CAKE

1 cup butter	3 cups flour
2 cups sugar	4 tsp. baking powder
6 eggs	4 sq. baker's chocolate
	1 tsp. vanilla extract

Melt the sugar and chocolate on top of a double boiler. Cool. Sift the flour, measure, and add baking powder sifting it for three times.

Cream the butter and add the sugar; when creamy add the sifted flour alternately with milk and flavoring. Mix well and pour in a well greased baking pan 9 inches in diameter. Bake in a moderate oven 350 F.

ENSAYMADA

1½ c. lukewarm water	1 tsp. sugar
4 cakes fleishman yeast	2 cups flour

Mix well and set to rise in warm place for 1 hour.

To sponge yeast above add:

½ c. sugar	2 cups flour
8 egg yolks	

Mix again and set aside for another hour.

Cream thoroughly 1 1/2 c. butter; add 1/2 cup sugar and 8 eggs yolks. Add the second mixture and mix 6 cups flour. Knead and roll into ensaymadas. When risen, bake.

ROLLS

6 cups flour	1 c. cold water
1 cup milk	2 yeast cakes
3 tbsp. sugar	1 egg
4 tsp. salt	6 tsp. shortening

Sift flour and measure. Scald the milk in saucepan into large bowl. Pour in hot milk, stir until ingredients dissolve. Blend half of sifted flour (3 cups) into mixture. Add unbeaten egg. Beat butter until smooth. Add remaining flour. Stir until well mixed. If dough seems too soft to handle have a little more flour. Form into rolls; let rise and bake.

PINIPIG COOKIES

1/2 lb. butter or butter substitute	3 c. puffed pinipig (cooled)
1 1/2 c. sugar	3 c. flour
3 eggs	1 tsp. baking powder
1 tsp. flavoring	

Cream the butter and add the sugar. Add eggs and beat well. Add puffed pinipig cooled to room temperature. Add flour previously sifted with baking powder. Add lastly the grated rind. Drop by teaspoon on a well greased cookie pan and bake in a hot palayok oven from 7 to 10 minutes.

RICH COOKIES

1 c. butter	3 1/2 c. flour
1 1/2 c. sugar	1 tsp. baking powder
3 eggs	1 tsp. lemon rind or any flavoring

Cream the butter, then add the sugar. Add the eggs and beat well. If fluffy, add the sifted flour and lastly the rind or any flavoring. Mix well and pass it through a cookie press. Drop in a well greased cookie sheet. Bake in a hot oven for 10 to 15 minutes.

CORNSTARCH COOKIES

1 c. butter	5 c. cornstarch or arrow root starch
1 c. sugar	1 tsp. baking powder
5 eggs less 2 whites	1 tsp. flavoring

Same procedure as the Rick Cookies. Follow order of ingredients above.

PAPAYA PINEAPPLE CANDY

6 cups crushed pineapple 4 $\frac{1}{3}$ cups sugar
6 cups crushed ripe papaya

Place in a copper vat the above ingredients. Cook, stirring continuously until thick and can be molded to candy in any desired form. Cool and wrap.

BAKING POWDER BISCUITS

2 cups flour 5 tbsp. fat
3-4 tsps. baking powder $\frac{3}{4}$ 1 cup milk
1 tsp. salt

Sift dry ingredients together twice. Work in fat with fingers or a fork, or cut in with 2 knives held back while working. Add milk, all at once, mixing until product cleaves from sides of bowl. Dough should be as soft as can be handled. Turn onto a lightly floured board, knead vigorously for 20 seconds. Shape into a ball. Pat or roll lightly into a sheet $\frac{1}{2}$ to $\frac{3}{4}$ inches in thickness. Shape with a floured cutter. Place fairly close together on a floured pan. If crusty sides are desired, place farther apart. Bake in a hot oven (425-450 F.) 12 to 15 minutes. 20 biscuits, 1 $\frac{1}{2}$ " high, 2" in diameter.

TUTTI FRUITI NUT COOKIES

1 $\frac{1}{2}$ c. finely chopped casuy nuts $\frac{1}{2}$ c. finely cut glazed orange peel
or substitute 3 c. flour
1 $\frac{1}{2}$ c. sugar 1 tsp. baking powder
3 eggs 1 tsp. flavoring
 $\frac{1}{2}$ lb. butter or butter substitute

Cream the butter and add the sugar. Add eggs and beat well. Add nuts and orange peel. Add flour previously sifted with baking powder. Add lastly the flavoring. Drop by teaspoon on a well greased cookie pan and bake in a hot oven from 7 to 10 minutes.

COOKED MERINGUE

4 tablespoons water $\frac{3}{4}$ teaspoon vanilla flavoring
4 tablespoons egg white 1 teaspoon gelatine dissolved in
 $\frac{1}{8}$ teaspoon salt 1 teaspoon water
1 cup sugar

Put water, egg whites, salt and sugar on top of double boiler and beat to blend ingredients. Soften gelatine in cold water. Cook egg white mixture over boiling water, beating constantly 3 or 4 minutes or until meringue piles into glossy peaks. Add softened gelatine and beat vigorously 1 minute. Remove from heat and place pan in cold water; beat until cool. Flavor and spread on pudding.

Chapter XV

MISCELLANEOUS

(Recipes and other Preparations)

Those who worked with Miss Maria Y. Orosa before and during World War II volunteered to contribute their existing collections of their recipes and other preparations done as the occasions called for. It is a well known fact that Miss Orosa as a culinary expert had introduced not only recipes for frugal living but also novel ideas in meal presentation and food trends.

Meals of coconut preparations from soup to dessert were demonstrated before high officials of the government. Chicken roast in a palayok oven was beyond compare, remarked a foreign critic. The creative talent of the Pilipinos was all the more highlighted when she fashioned cakes into Dahlia, Book, Log, Fan, etc. Preserves were arranged to appeal to the aesthetic sense of the consumer. The use of local pinipeg for cookies, homemade starches from banana, cassava, and other root crops into bread and cakes, were samples of her ingenuity. The war did prove that canning our native dishes as adobo, paksiw, dinuguan, kilawin, etc. made it possible to provide food to the guerrillas and American internees.

The Pagsanjan Rural Improvement derives comfort in the thought that their dish canning during the tense Japanese occupation saved them from starvation during evacuations.

This collection is confined to what the former staff members of the of the Plant Utilization Division can recall and gather of the procedures they had undertaken for meal preparation and canning. Soap and salt making procedures as resorted to during the war can certainly find its way into the present-day Pilipino home.

MANGO JAM

Scrape the pulp from the ripe mangoes and mash it. Use the stainless utensils to prevent discoloring. Then measure.

To every cup of pulp, add $\frac{1}{2}$ cup of white sugar. In case of sour mangoes, increase sugar to $\frac{2}{3}$ cup. Stir while cooking.

until it thickens. Pour while hot in jars or cans and sterilize. Sterilize quart jars for 30 minutes; pint jars for 25 minutes; ½ pound can and number two (2) tall cans, for 30 minutes.

PAN-DE SAL

1½ cups lukewarm water	1½ teaspoon sugar (7 g)
1 tablespoon compressed yeast 12 g)	1½ cups cassava flour (115g)
	¾ cups wheat flour (425 g)

Dissolve yeast in lukewarm water. Add sugar, salt, and lastly, the sifted flours. Work and beat the dough until it is thoroughly smooth and fine. Set aside (aside) in a bowl. Let rise for 1½ hours. Punch and let rise again for 30 minutes. Roll to a cylindrical form about 2 feet long. Let rise for about 10 minutes. Then cut to 15 equal pieces. Dust with bread crumbs and let rise in a greased baking sheet till double their size. Bake in moderately hot palayok-oven for 15 to 20 minutes.

GUAVA JELLY

Sort and use one part of mature to one part of ripe guavas. This is purposely done to acquire the maximum pectin from the green mature guavas and the distinct flavor from the ripe ones.

To one kilo of guavas, add 2 kilos water and boil to softness (from 30 to 35 guavas make a kilo). While boiling, mash with the aid of a wooden, aluminum or porcelain spoon (iron utensils should be avoided). Strain through a piece of cheese cloth and measure the juice. To every quart (almost a kilo) of guava extract, add 1 pint of sugar (refined), washed or brown may be used, but the brown imparts a dark color). Add 4 tablespoons of calamansi juice. Bring to a boil and strain to remove impurities. Boil again until the jelling point is reached (108°C or 226.4°F).

In the absence of a thermometer, the following test may be used: Place one drop of boiling jelly in a saucer containing a small amount of water. If it solidifies immediately, the end point is reached.

Transfer the jelly while hot in clear, dry jelly glasses. Cool and cover with a thin layer of melted paraffin. Cover, label and store it in a cool, dry place.

About 3 glasses of 10-oz. capacity may be made from the above recipe.

OROSA MAGIC FOOD

- | | |
|--|--|
| 1 kilo toasted soy beans—grind
very very fine | ½ kilo sugar
1 c. Klim or powdered milk |
|--|--|

Sift the toasted grinded soy beans. Heat in the oven for 30 minutes. Remove from the oven; add the sugar then the powdered milk. Place in a sterilized bottle and close tightly.

This can be eaten as it is or make a drink of 2 tbsp. to a glass of cold water. Stir well.

PORK AND BEANS

- | | |
|----------------------|---------------------|
| 5 kilos cooked beans | 600 grams sugar |
| 1 kilo cured pork | 200 grams salt |
| 35 cups catsup | 1 tablespoon pepper |

Mix ingredients and heat. Can and sterilize.

CARAMELS

- | | |
|-------------|-------------|
| 1 cup sugar | ¼ cup water |
|-------------|-------------|

Boil until thermometer registers 140°C. Drop by spoonfuls on a buttered sheet and top each with casuy nuts.

SOAP

- | | |
|----------------|---------------|
| 1 kilo ash | 50 grams lime |
| 5 liters water | 20 grams salt |
| 200 cc. oil | |

Place ash in a cracked pot and pour the water over it, collecting the drippings in another container placed under the pot. Leach the ash this way for several times by pouring the drippings repeatedly over the ash.

Boil the lye collected with lime for 20 minutes. Allow to settle and decant clear liquid. Boil down this liquid to about half a liter. Heat the oil in an enamel pan, pour the lye gradually stirring slowly. Continue cooking a few minutes longer, then drop a small amount on a board. If it hardens upon cooling then the soap is done. Pour mixture immediately in molds.

REFINED SALT

Dissolve crude salt in water until a 100° saturation is reached. Filter the brine through sand, then evaporate brine at boiling temperature. Fish out crystals and drain then centrifuge immediately. Spray water to wash off impurities. Place centrifuged salt in trays and dry in a drier at 92°C. for 4 hours. Grind then sift the refined salt.

KITCHEN HINTS

By Helen Orosa Del Rosario

Budget and plan for the week's marketing.

Buy foods that are in season and by the bulk — they cost cheaper.

For best results in cooking, clean and assemble all utensils and ingredients to be used. Cleaning, washing, soaking, cutting and sauteing should be done before cooking. When several ingredients are to be used, measure and mix them first before they are cooked.

Vegetables. When cooking vegetables, a small amount of shrimp broth or rice washings boiled in a high uncovered kettle should be used. This will keep the bright color of the vegetables and prevent them from being overcooked.

Buying. When buying meat cuts, ask for the bones and trimmings; these can be used for stocks for soups and vegetables.

Flour. To dissolve flour, use cold liquid first before adding the hot liquid. In making white sauce, melt shortening and stir the flour into it before adding milk.

Starch mixtures. Starch mixtures such as spaghetti, macaroni, etc., should be cut to desired length before cooking. Before starch mixtures are added, the liquid used should be boiling. When cooked, strain and pass cold water and strain again. This will prevent the starch mixture from getting sticky.

Eggs. When eggs are used in cooking add the mixture to the eggs and stir before heating. Eggs coagulate when heated.

Acid or Vinegar. Vinegar when cooked with egg or milk causes the mixture to curdle. If vinegar or acid is added in cooking vegetables, the vegetables should be softened first before vinegar is added.

Salt and sugar. When cooking desserts add a dash of salt and in cooking meat or fish add a few grains of sugar.

Cooking rice. Don't throw away rice washing. It is rich in Vitamin B and maybe used for cooking when broth or sauce is desired. Left over cooked rice can be used for fried rice or sinañgag.

Refrigeration. Meat and fish are best kept in plastic containers in the refrigerator. This makes separation and removal easy.

Cutting. In cutting chicken use a sharp knife and cut between joints. Stainless steel knives are best for cutting potatoes, onions, bananas.

Discoloration. Soak pared potatoes, sweet potatoes, eggplants in water to avoid discoloration. Pared apples, bananas will not discolor if a little calamansi juice is added to them. Ripe bananas discolor less than unripe bananas. To prevent too much discoloration use a sharp knife for cutting fruits.

Oils. Used or left-over oils can be used over and over again if stored in a dry covered container after straining. Excess fat from pork or bacon maybe used for sauteing.

Shrimps. Shrimps if used are preferably shelled raw and sauted before hand. Don't throw away the shrimp shells; after pounding them, add water and strain. The resulting stock can be used for cooking vegetables.

Frying. In frying, the pan should be very clean and well-heated before lard or oil is poured on it. The lard or oil should be very hot when used for frying.

ABBREVIATIONS*

Baking powder — B.P.	Ounce — oz.
Centigrade — C	Quart — qt.
Cup — C	Pint — pt.
Fahrenheit — F	Pound — lb.
Grams — g	Tablespoon — tbsp.
Kilo — k	Teaspoon — tsp.
Liter — ltr. or l.	

* EQUIVALENTS*

1 dash — slightly less than $\frac{1}{8}$ teaspoon	2 cups — 1 pint
1 teaspoon — 60 drops, liquid	2 pints — 1 quart
3 teaspoons — 1 tablespoon	4 quarts — 1 gallon
1 tablespoon — 1 cubic centimeter	1 ounce (weight) — 28.35 grams
16 tablespoon — 1 cup	1 liter — 105 quarts-liquid
	1 kilo — 2.2 lbs.

FORMULA TO F TO C*

$$(C \times 9/5) + 32 = F$$

$$(F - 32) 5/9 = C$$

* Standard.

DEFINITION OF COOKING TERMS

- APPETIZER** — A small serving of food or beverage, served before meals
- BAKE** — To cook in an oven at a desired temperature
- BASTE** — To add liquid over food, while cooking, by pouring, brushing, spooning or wiping with fat, drippings, etc.
- BATTER** — A smooth mixture of flour, liquid and other ingredients which can be poured, or used to coat food before frying
- BEAT** — To introduce air through agitation by means of a fork, spoon, whisk, or mechanical electric beater to insure a smooth mixture, as in egg white
- BLANCH** — To submerge in boiling water for a short time and then in cold water
- BLEND** — Combine ingredients until smooth or even
- BOIL** — To cook in liquid that has been heated until large bubbles constantly appear on the surface. Water boils at sea level at 100 C or 212 F.
- BOUILLION** — Clear soup made from lean meat stock with seasoning.
- BRAISE** — To brown meat or vegetable in a little fat or oil, add a small amount of liquid, then cook over low heat, covered
- BREAD CRUMBS** — Dried pieces of bread thoroughly crused and well dried, but not browned. Soft bread crumbs are made by finely shredding fresh bread between fingers. Used for dressings, thickenings, filling, etc.
- BREW** — To let stand or boil in water, so as to extract flavor as in coffee.
- BROIL** — To cook in direct heat, on a broiler, hot coals or charcoal
- BRINE** — Mixture of salt and water
- CANAPE** — An appetizer made of a small piece of bread, etc.

- spread with highly seasoned food, or may include fried *dilis*, *chicharon*, fried *hibi* or fried dried squid.
- CHILL**—To place in a cool or cold place until the temperature is lowered to a point between freezing and normal room temperature
- CHOP**—To cut into small pieces by use of a knife
- CHOWDER**—A dish made of fresh fish or clams, pork crackers, onions stewed together
- CREAM**—To make smooth, soft and creamlike by stirring or beating, as butter, lard, etc
- CROUTONS**—Cubes of toasted or fried bread served with soup
- CUTLET**—A small piece of meat cut from the leg or rib of veal, pork or chicken
- DEVIL**—To make a food hot or spicy by adding condiments
- DILUTE**—To reduce strength by adding liquid usually water
- DISSOLVE**—To mix a solid or powdered substance with liquid until it is liquid too.
- DOUBLE BOILER**—Combination of one pan on top of another so that food on the upper pan is cooked by the boiling water in the lower pan.
- DREDGE**—To coat a solid food by sprinkling flour, sugar, powdered bread
- DRIPPINGS**—Fats and liquid resulting from cooking meat
- DUST**—To sprinkle or coat lightly with a dry mixture
- FILLET**—Fleshy boneless side of a fish or boneless piece of meat
- FLAKE**—To cut or grate into shavings
- FOLD IN**—To add a light fluffy substance to a liquid or semi solid mixture so that the product maintains some of the lightness.
- FREEZE**—To store in a temperature of 0°C or 2 below 0
- FRY**—To cook in hot fat. Deep-fry: To cook in plenty of fat or oil. Pan fry or saute: using just a film of fat
Shallow fry: using up to 1½ inches of fat
- FUYUNG**—To cook with eggs giving an omelet effect
- GARNISH**—To decorate food when ready to serve
- GLAZE**—To cover with thin syrup.

- GRATE**—To shred up fine by the use of a grater or to rub on a grater
- GRILL**—To cook by direct heat on a gridiron
- HORS D'OEUVERS**—See canapes
- KNEAD**—To manipulate with a pressing motion, plus folding and stretching
- LARD**—To place strips of fat in lean meat either by drawing it through the meat or laying it in deep cuts on the surface, as in mechado.
- LEAVEN**—To cause baked foods to rise by adding a leavening agent as baking powder
- LIQUOR**—The fluid from meat or vegetables
- MARACHINOS**—Papaya balls preserved with red coloring
- MARINATE**—To add to food an acid-fat mixture (marinade) usually French dressing, or Olive oil-calamansi mixture
- MASH**—To crush or press with a fork so that the food becomes finer and plastic
- MINCE**—To chop up or cut real fine
- MIX**—To combine ingredients so that they are evenly distributed
- MOLD**—To put in a container so as to retain the shape even after the food has been removed.
- PARBOIL**—To boil food in water until it is partially cooked to remove outer covering with the use of a knife
- PARE**—To remove outer covering with the use of knife
- PASTE**—A fine homogenous mixture
- PEEL**—To remove outside covering usually with fingers
- PUREE**—A semi-liquid homogenous food ground finely and well mixed, or passed through fine sieve or strainer
- ROAST**—To cook uncovered, without adding moisture in an oven or open fire of charcoal, usually applied to meat
- SCALD**—To heat liquid just below the boiling point
- SAUTE**—Fry in a thin layer of fat
- SEASON**—To add salt, pepper, spices, herbs, to improve flavor
- SECTION**—To cut into one or two inches length
- SHIFT**—To press through a fine sieve as in flour
- SHELL**—To remove the outer covering or layer of a seed, nut or crustaceans

- SHRED** — To cut into strips, or tear finely
SIMMER — To cook in liquid just below boiling point
SLICE — To cut into very thin pieces
SMOKE — To soak in seasoning and put in layers on a rack over smoke of saw dust or charcoal
STEAM — To cook on a rack, in a closed container so that the heat from the steam of the boiling water does the cooking.
STIR — To mix ingredients, using circular motion
STOCK — Liquid, usually water in which meat, fish or vegetables has been cooked
STUFF — To pack with a mixture
TOAST — To brown with dry heat
WEDGE — To cut in small triangular sections
WHIP — To incorporate air into a mixture by beating with a rapid rotary motion

OVEN GUIDE*

- Slow oven — 275°F to 325°F
Moderate oven — 325°F to 375°F
Moderate hot oven — 375°F to 425°F
Hot oven — 425°F to 475°F
Very hot oven — 475°F and above



TAGALOG-ENGLISH TRANSLATION *

ENGLISH	TAGALOG
Anato seeds	Achuete
Apples	Manzanas
Bacon	Tusino
Bitter melon or bitter gourd	Ampalaya
Balls	Bola-bola
Bamboo shoots	Labong
Banana	Saging
Bake	Hornohin - ihurno
'Cooking banana'	Saging na saba
Barbecue	Inihaw
Baste	Basain nang sabaw
Bay leaf	Laurel
Beans:	
Hyacinth beans	Batao
Chick peas	Garbanzos
String beans	Sitao
Winged beans	Sigadillas
Lima beans	Patani
Baguio beans or	Habichuelas
Snow beans	
Mung bean	Mongo beans
Beat	Batihin
Beef	Karneng Baka
Beefsteak	Bistik
Beer	Cerveza
Beet	Remolacha
Beverage	Inumin
Blanch	Halabus—Ihalbos
Blend	Paghaluin
Boil	Ilaga—pakuluan
Bottle gourd	Upo
Bread	Tinapay
Breadcrumbs	Tinapay na imimugmug
To bread	Igulong sa dinikdik na tinapay
Bread fruit	Rimas
Breakfast	Almusal o agahan
Broil	Ihaw o ihawin
Butter	Mantekilya

* More translation in the book "Dictionary of Foods" by V.S. Claudio and S.Y. de Leon. 1970. Manila: G. Miranda and Sons.

Cabbage	Repolyo
Candy	Kendi
Sweets	Kalamay
Carrots	Zanahoria
Cassava	Kamoteng kahoy, balenghoy, kamoteng Moro
Casserole	Kaserola
Celery	Kinchay Baguio
	Kinchay China
Cheese	Keso
Chicken	Manok
Chilled	Pinalamig
Chocolate	Tsokolate
Cinnamon	Kanela
Cloves	Klavo de comer
Coconut	Niyog
Immature coconut	Buko
Grated coconut meat	Kinudkod na niyog
Coconut milk	Gata
Coconut trunk (pith)	Ubod
Freak coconut with no milk and all soft meat	Makapuno
Grated coconut meat with milk extracted	Sapal
Coconut precipitate after oil is extracted from milk	Latik
Coleslaw	Ensaladang hilaw na repolyo
Cook	Lutuín
Corn	Mais
Cornmeal	Mais na giniling
Cream	Nata-Krema
Ice cream	Sorbete
Croquettes	Kroquetas
Crush	Pitpitin
Cucumber	Pepino-pipino
Cut	Gayatin
Cup (measuring)	Taza
Dessert	Panhimagas
Dice	Tiladin nang cuadrado
Dinner	Mabigat na tanghalian
	Hapunan

Drain
Dry
Eggs
 Scrambled
 Upside down
 Egg white
 Egg yolk
Fame flower
Fat:
 Solid
 Liquid
Fish
 Smoked fish
Flour
Fritters
Fry
Frying pan
Deep pan
Gelatin
Ginger
Grate
Grapes
Grind
Guava
Ham
Iced
Jackfruit
Jam
Java plum
Lard
Lemon
Lettuce
Liver
Luncheon
Lye
Mango
Meat
Melt
Mince
Milk
 Evaporated
 Fresh

Patuluin
Tuyuin
Itlog
 Binati
 Estrelyado
 Puti nang itlog
 Pula nang Itlog
Talinum
Taba
 Mantika
 Langis
Isda
 Tinapa
Harina
Marhuya or Maduya
Prito
Kawali
Kaldero
Gulaman
Luya
Kudkurin
Ubas
Gilingin
Bayabas
Hamon
Pinalamig
Langka (Nangka)
Haleya
Duhat
Mantika
Dayap
Litsugas
Atay
Tanghalian
Lihiya
Manga
Karne
Tunawin
Dikdik
Gatas
 Evaporada
 Sariwa

Mix
Mushroom
Noodles —
 Miki
 Sutanghon
 Misua
 Bijon
 Pancit Canton
Omelet
Onion
Oranges
Oven
Pan broil
Pare
Peel
Parsley
Peanut
Peas
Spanish Chickpeas
Pickles
Pork
Pork crackers
Popped-pork
Salad
 Say sauce
 Soy bean curd
 Cake of fermented flour
 and soy beans
Starch
Steam
Stew
Stir
Stock
Sugar
 refined
 brown
 crude
Syrup
Salt
Sauce
Sauté
Scald

Paghaluin
Kabuti

Wheat noodle with egg
Mongo starch noodles
Fine thread like wheat noodles
Rice noodles
Dried wheat noodles
Tortilya, torta
Sibuyas
Suha o Naranjita
Hurno
"Asado sa Caranjay"
Talupan
Balatan
Perijil
Mani
Gisantes
Garbanzos
Atsara
Karneng Baboy
Sitsaron
Sitsaron
Insalada
Toyo
Tokua
Tausi

Gawgaw
Pasingaw
Pasina
Batihin
Sabaw
Asukal
 refinado
 pulang asukal
 panutsa
Arnibal
Asin
Sarsa
Igisa
Banlian

Soup	Sopas
Mongo sprouts	Togue
Mush	Masahin
Sour	Maasim
Sour Sop	Guayabano
Sponge Gourd	Patola
Sweet Sop	Atis
Tablespoon	Kutsara
Teaspoon	Kutsarita
Toast	Tostahin
Tapioca	Sago
Tenderloin	Solomilyo
Tomatoes	Kamatis
Tripe	Goto
Turnips	Sinkamas
Pepper	Paminta
Pint	Dalawang Tasa
Potatoes	Patatas
Pumpkin	Kalabasa
(Squash)	
Radish	Labanos
Rice —	Bigas —
Glutinous rice and	Malagkit
mixture of ground rice and	Galapong
water made to stand over-	
night	
Rice bran	Darak
Rice Husk	Ipa
Cooked rice	Kanin
Toasted Rice	Sinangag
Vinegar	Suka

Sea Foods Found in the Philippines

Anchovy	Dilis
Very fine dilis	Dulong
Salted or fermented dilis-	Bagoong
Barracuda	Trosilyo
Big eyed herring	Dilat
Big eyed scad	Matang baka
Caesio	Dalagang bukid
Carp	Carpa
Catfish	Hito (freshwater)
Cavalla	Talakitok

Clams
Crab

Small fresh water crabs
Dried shrimps
Eel
Goby
Codfish
Groupers
Hairtail
Lizard fish
Lobsters
Milkfish
Mullet
Mudfish
Murel
Mussel
Oysters
Porgy
Ray
Red Snapper
Scaled Brill
Sea Bass
Shark
Sharkfish
Shrimp
Fine small shrimps
Salted & fermented alamang
Slip mouth
Snail
Spanish mackerel
Surgeon fish
Sword fish
Spiny lobster
Spotted Grunt
Squib
Stripped mackerel
Tuna
Turbod or Sole

Tulya, Halaan, Kango
Alimango— thick shelled,
dark skinned, heavy
Alimasag— thin shelled, slender
appendages, light colored
Talangka
Hibi
Igat
Bia
Bakalaw
Lapu-lapu
Balila
Kalaso
Sugpu
Bangus
Banak
Dalag
Dalag
Tahong
Talaba
Bitilya
Pagi
Maya maya
Dapa
Apayap
Pating
Kanduli
Hipon
Alamang
Bagoong
Sap-sap
Susu
Tanguingui
Labahita
Spada
Banangan
Ago-ot
Pusit
Alumahan
Tulingan
Lapad

A FEW PRINCIPLES OF NUTRITION

By Dr. Sixto Y. Orosa

Of course we all want to eat attractive, delicious, well-presented viands. However, the real value of foods does not depend upon their appearance or taste. It depends rather upon their contents, palatability and digestibility.

Our body is composed of cells, the cells make up the organs, the organs make up the systems such as the nervous system, the circulatory system, the digestive system, etc. Myriads of cells are shed off daily and are replaced by new ones.

Hence, it is very necessary that we digest and absorb what we eat in order to replenish the used-up cells. The components of our body are more or less the components of our foods, hence our need, likewise, of a variety or balance in our meals.

It is food that generates the heat and energy of our body, but unlike an engine, our body has the ability to store excess energy specially in the form of fat, starch and sugar, which can be tapped when needed.

Food is classified into 1) sugars and carbohydrates, fats and oils, proteins, minerals, and of much later vintage, vitamins.

The principal sources of carbohydrate are sugar, molasses, honey, syrup, candies, jams, jellies, cereals such as rice and corn, bread, cake, macaroni, spaghetti, some fruits (such as banana and papaya) and some vegetables.

The chief sources of fat are fat meats, lard, vegetable oils, butter, cream, egg yolk and nuts. Some fats are oily; others, solid. Sugars and starches are eventually converted into glucose; on the other hand, some fats can be made by our system from glucose.

The principal sources of animal proteins are milk, cheese, lean meat, fish, seafood, poultry, eggs. Vegetable sources of protein are peas, beans, mungo, nuts, mango, etc. Proteins build our bodies, specially our muscles, liver, kidneys, etc.

The term for measuring fuel requirements is the calorie. A calory or calorie is the amount of heat required to raise one kilogram of water one degree (1°C.) centigrade. Starches and sugar yield approximately 120 calories per ounce; proteins have almost the same value, fats yield 270 calories per ounce.

The average man needs approximately 3,000 calories per day; the average woman, about 2,500. A sedentary person, a clerk for example, can get along with 2,100 calories per day, while a farmer or carpenter might need as much as 4,500 calories.

VITAMINS

Vitamins have been discovered relatively recently. Although they have no food value they constitute essential elements in food. It has been shown that when animals are fed with well-balanced food whose vitamins have been destroyed (as by excessive heat), the animals die quickly, but when they start being ill and are fed with food containing fresh vitamins, they soon recover their health. Lack of vitamins leads to deficiency diseases.

Vitamins have been named after the letters of the alphabet for convenience. Although it is customary to start with Vitamin A, let us start with Vitamin B because of a story of local vintage. When the U.P. College of Medicine and Surgery was newly transferred from Malecon Drive to where is now on Herran street, there was great excitement among certain professors, e.g., Dr. Freer (Chemist) and Andrew (pathologist), Americans, Dr. Hans Aaron (physiologist), German, Dr. Musgrava (internist) American, Dr. Luis Gemeno and Dr. Antonio Sison, Filipino internists, etc. They found out that if chicks or grown-up chickens were fed with white rice, they developed neuritis within a few days, and the disease was quickly baptized "neuritis gallinarum". But when these diseased chickens were fed with unhulled rice (palay) or "darak" (rice bran) they quickly recovered. It was found out that the principal ingredient of the "darak" was Vitamin B

and the extract was called "tiki-tiki" which even now is being used in the treatment of infantile beri-beri.

Later, as the study of vitamins progressed, Vitamin B, in its pure form, began to be called Thiamin chloride and in its complex form, Vitamin B-complex.

In man, lack of vitamin B, leads to beri-beri, neuritis, ascites (collection of fluid in the abdomen), certain heart diseases, weakening of memory, etc.

Included under vitamin B complex are Vitamin B₁, Pyridoxin (Vitamin B₆), Pantothenic acid, Para-Amino Benzoic acid, Choline, Biotin, Inositol, Folic acid, Vitamin B₁₂, Riboflavin (Vitamin B₂ or G and Nicotinic acid. (For sources of vitamins see page 203.

VITAMIN A

Vitamin A is important and useful. Continued deficiency in Vitamin A leads to malnutrition, dry eyes, ulcers on the cornea some of which lead to its rupture. Administration of codliver oil or other foods or substances rich in Vitamin A quickly improves these conditions.

I saw patients suffering from such ailments in Barrio Aplaya, town of Bauan, Batangas province, during the occupation, and I thought I saw a miracle when the ulcerous-eyed children were in a few days restored to normal after a few days' administration of codliver oil (Emulsion de Scott).

Vitamin A deficiency injures the epithelial cells throughout the body, such as the outer layer of the skin, the membrane of the mouth, the lining of the respiratory, digestive and genito-urinary and other secretory tracts. We have already mentioned the effect of Vitamin A deficiency on the eyes; another effect is night blindness. The nursing mother must have plenty of Vitamin A in her food for the sake of the normal growth of the teeth of the infant.

An overdose of Vitamin A (or of carotene, a variety of Vitamin A but not as effective) is harmful, and should be avoided.

ASCORBIC ACID (Vitamin C)

In olden times when long voyages were undertaken such as those commanded by Magellan and Columbus, the main

provisions were salted meat and starch (for making bread). The officers and crew invariably suffered from scurvy until they touched land where they could eat fresh fruits and vegetables.

The soldiers of ancient armies also suffered from scurvy but not to the same extent that the sailors did because it was easier to secure fruits and vegetables on land.

The special fruits and vegetables that are beneficial for scurvy are those rich in Vitamin C. Lack of ascorbic acid is characterized by bleeding of the gums, loosening of the teeth, bleeding in the different parts of the body — as in the sockets, or articulation of the bones. In 1763 it was discovered that the administration of ascorbic acid prevented or remedied these conditions.

Other effects of Vitamin C deficiency are the weakening of the capillary blood vessels thus leading to hemorrhages, the weakening of the bones thus causing spontaneous fractures and the loss of resistance against infections. Persons who are taking aspirin need more Vitamin C than usual, because aspirin destroys vitamin C. Citrin and Vitamin P are varieties of Vitamin C, and reinforce the latter in the prevention and cure of capillary fragility.

VITAMIN D

Rickets, specially in infants and young adults, which is characterized by the rarefaction or incomplete development of the bones, has been identified with Vitamin D deficiency. If the case is still reversible, administration of codliver oil which is rich in Vitamin D quickly restores the health of the patient. It has been noted that codliver oil is also rich in Vitamin A, but experiments have shown that it is the Vitamin D in it that cures rickets.

There is a substance in the skin which is transformed into Vitamin D when exposed to sunlight or ultraviolet rays.

Early and continuous administration of Vitamin D makes for good strong teeth free from cracks, fissures and caries. In some countries it is obligatory to fortify artificial milk with Vitamin D. Vitamin D is an important regulator of the calcium and phosphate contents of the blood, and therefore is beneficial to adults, particularly to pregnant women.

VITAMIN E (Alpha-Tocopherol)

Deficiency in Vitamin E has some bearing on the fertility or pregnancy of rats and other experimental animals, but only to a slight extent on that of human beings. The same thing may be said about the human muscle. Deficiency in Vitamin E may result in degeneration changes called muscle dystrophy.

VITAMIN K

Quite recently it was observed that some spontaneous bleeding, which suggested a deficiency in Vitamin D refused to stop even after administration of this or other Vitamins. It was found out that only green leafy vegetables promptly shortened the coagulation time and promptly stopped the hemorrhage. The active principle was found to help the blood coagulate normally, hence the names "Koagulen" and Vitamin "K".

Most surgeons have the blood examined for coagulation time, and if it is prolonged, Vitamin K is administered by injection. In a few minutes it restores the coagulation time to normal, and the operation is then undertaken.

Just a line about other components of the blood. These are of course water and minerals, notably phosphorous and calcium. Dehydration, or lack of water in the blood, makes the patient restless and delirious. Administration of water promptly corrects the condition. An expert medical technician is necessary to determine the calcium or phosphorous deficiency.

There are quite a number of general vitamins which contain sufficient amounts of the important vitamins, in such a way that if one pill, capsule or tablet is taken once a day, their vitamin contents suffice for the day's needs. For children the usual preparations are in the form of syrups.

It can be said that a teaspoon or tablespoonful of general or multi-vitamins (pill, capsule, tablet or liquid) a day will not only drive many a disease away, but will also improve one's health a great deal.

Appendix I

SOME OUTSTANDING RESEARCH STUDIES OF THE LATE MARIA Y. OROSA

By Jose I. Sulit

Miss Orosa's research studies are many and some of them may be enumerated as follows:

1. Utilization of Philippine fruits in the manufacture of fruit wines;
2. Manufacture of fruit jellies from guava using tamarind, santol, calamansi and other sour fruits as the source of acids;
3. Manufacture of toyo from soybeans and other beans, including copra;
4. Studies on the preparation of nata de piña and utilization of its by-products in the manufacture of vinegar. Note: Before Del Monte ever thought of making vinegar from pineapple, Miss Orosa had been making it even before World War II.
5. Utilization of native vegetables in the manufacture of sweet-mixed pickles;
6. Utilization of powdered soybeans in the manufacture of magic food;
7. Studies on the preparation of soy bean milk;
8. Studies on the preparation of jams, jellies and marmalades;
9. Development of a palayok oven;
10. Studies on the preparation of American bread with varying percentage of cassava and wheat flour;
11. Preparation of bread, cookies and cakes from native flour;
12. Utilization of powdered green *saba* banana flour for baking;

13. Utilization of dried candied fruits in the preparation of fruit cakes;
14. Preparation of cookies from cassava starch;
15. Preparation of calamansi concentrates from calamansi juice;
16. Studies on the preservation of various fruit juices;
17. Studies on the preparation of dehydrated fruits, such as mangoes, santol, and vegetables;
18. Studies on the canning of ripe carabao mango and utilization of its by-products;
19. Studies on canning fish and meat;
20. Studies on the preparation of dehydrated shredded beef;
21. Studies on the preparation of fish balls;
22. Studies on the preparation of agar from seaweeds (gulaman-dagat);
23. Studies on the preparation of dehydrated preserved fruits;
24. Studies on the preparation of frozen fruits, such as mango, papaya, etc;
25. Studies on the utilization of coconuts in the preparation of the following:
 - 1) Flour
 - 2) Breakfast food with cassava flour
 - 3) Coco-honey
 - 4) Milk
 - 5) Nata de coco
 - 6) Vinegar
 - 7) Soup
 - 8) Cheese and butter
 - 9) Culinary cooking oil
 - 10) Pharmaceutical vehicle
 - 11) Candies
 - 12) Salad oil, etc.
26. Studies on the utilization of meat and poultry in the preparation of the following:

- 1) Adobo
 - 2) Canned boiled beef
 - 3) Dinuguan
 - 4) Mechado, etc.
27. Studies on the preparation of native food recipes;
28. Studies on the utilization of peanuts in the preparation of the following:
- 1) Candies
 - 2) Salad oil
 - 3) Culinary oil
 - 4) Butter
 - 5) Flour, etc.
29. Studies on the preparation of concentrated canned food for the Army;
30. National Community Canning in the rural areas;
31. Practical method of determining rotenone from derris roots;
32. Extraction of nicotine insecticide from tobacco dust and tobacco waste material;
33. Determination of food values of agricultural products and by-products;
34. Studies on the pickling of cucumber and green tomatoes;
35. Studies on the preparation of saba banana, camote and potato chips;
36. Studies on the preservation of macapuno preserve;
37. Studies on the mechanization and preparation of toasted kasoy nuts;
38. Studies on the preparation of soybean curd and utilization of the by-product soybean flour for bread and cookies-making;
39. Studies on the preparation of various kinds of catsup from
- 1) Banana
 - 2) Mango
 - 3) Ripe tomatoes, etc.
40. Studies on the natural preservation of fruits and vegetables in solution for display purposes;

41. Studies on the utilization of papaya, guava and corn and their food values;
42. Preservation of various canned nuts with the aid of a vacuum;
43. Utilization of rice bran as food rich in vitamin B1 or thiamine;
44. Studies on the preparation of various recipes that are cheap but rich in food value.*

"Miss Maria Y. Orosa was born a hundred years ahead of her time."

Jose I. Sulit



* From the files and records of Mr. JOSE I. SULIT, Immediate Assistant Chemist of the late Maria Y. Orosa. Oct. 27, 1960.

