

Oil From Cocoanuts

In the days when men, like the birds, took no thought of what they should eat or wherein should they be clothed, their staple wants were easily supplied by the tree of the tropical forest. The coconut was both meat and drink for the natives of the tropics, for the milk was sweet and satisfying, while the white meat of the coconut furnished the oil to supply energy to the body. The leaves of the coconut tree were used for roofing the dwellings, or for the making of fans, baskets and other hand-craft products, and the wood of the tree was used for making huts or rafts.

The coconut tree is a great lover of the seas, and never is sandy beach so devoid of soil that the coconut tossed up by the friendly breaker cannot find a rooting space for the treelet incased within its protecting sheath.

Stately coconut palms, towering from 60 to 100 feet high, are found on every coral islet of the warm belt of the Pacific, as well as on the sandy beaches of the East Indies, the torrid coasts of tropical American places and on the fertile shores of the West Indies.

It is found especially of the innumerable islands that make up the Philippine Archipelago. In the Philippines, the coconut, except being merely a source of food for the natives, is fast developing into the largest industry in the islands, and thousands of tons of dried copra and millions of gallons of coconut oil are exported to all parts of the world.

Of Recent Development

Prior to the late eighties, the vast groves of the coconut palm in the Philippines were not utilized in a commercial sense, but about that time a British firm in Manila brought over samples of dried copra from Singapore and the people of Manila and Cebu were shown the process of converting the fresh cocoanuts into copra. The idea spread rapidly in the islands, but due to a lack of proper organization and supervision, the product did not measure up to the standard of other districts and the Philippine goods were not considered as good as that produced in other districts. By 1905 the Philippines produced 17 per cent of the copra in the world's market, and by 1911 the islands yielded approximately one-third of the world's supply. Since that time the industry has grown by leaps and bounds, and from one mill in 1913 there developed in 1918 over 30 of them, with a daily capacity of 1,300 tons of coconut oil, or an annual consumption of over 800,000 tons of copra, if run to full capacity.

The exports of coconut products from the Philippines are in the form of oil pressed from the fresh cocoanuts and shipped in barrels or tank steamers, or "copra" or the dried coconut meat, from which the oil can subsequently be extracted. A number of oil-extracting plants have been established in the United States and Europe to handle copra, because it has been discovered that the pulp left after the oil has been extracted is a very valuable stock food and can also be used as fertilizer and this by product commands a good price.

As a stock food it compares favorably with gluten feed, though it contains less carbohydrates and more fat, ash and fibre. The oil is used for many purposes, including cooking or for salads, the making of the soaps, etc.

There are at the present time in the Philippines approximately 40,000,000 bearing coconut trees, producing nearly 1,000,000,000 nuts per annum, of which nine hundred million are made into copra. A coconut palm will yield from 25 to 30 nuts each year, and they are taken from the tree, when fully mature, about once every three or four months. The nuts are collected in piles near the drying or smoking sheds and the outer shell or fibre is torn away from the hard shell of the nut by means of a tool similar to the plowshare. The nut is then split open with a large knife or bolo, and the halves, with the meat exposed, are placed over fires, on racks constructed of wood, and are allowed to remain there until the meat drops from the shell. When sun drying is practised, the halved nuts are allowed to remain subjected to the sun's rays for a period of about six days, or until the meat loosens from the shell.

Preparing the Copra.

The modern method is that of oven drying. The copra, cut into strips, is placed in trays in an oven heated by a stream of hot air. Heat is

maintained at 130 degrees to 140 degrees Fahrenheit for five or six hours. In some cases the trays are kept in motion, thus securing a more even distribution of heat that when stationary and removing all danger of superheating. In five or six hours the water content has been reduced to the required 5 per cent, and the white-clean copra is ready for shipment to the mills.

The modern mills for extracting coconut oil from copra have installed hydraulic presses and expellers by means of which about 60 per cent of the oil content is extracted by modern machinery, but the method in vogue is rather crude and the process slow and inefficient.

The nuts are halved, where the fresh cocoanuts are used, and the whole meat grated by means of steel burr driven with pedal attachment. The grated meat is transferred to the caua, or steaming kettle, where it is mixed with one-half its volume of water and steamed for from two to four hours by the application of direct heat from burning shells and husks. The steamed meat is then placed in rattan bags, which are suspended in a perpendicular position between two heavy pieces of wood, and pressure is applied by means of a wooden vice screw.

The gata, or white emulsion of oil, water and cellular tissue obtained, is returned to a second caua, where the water is evaporated and the cellular tissue coagulated into a brown mass. This cellular tissue, of high protein content, is used by the Philippine dwellers as a food. The oil is ladeled into earthenware vessels, and the small solid particles remaining are allowed to settle out. No filtering process is resorted to. The press cake is shaken through a bamboo basket in order to disintegrate it and is then allowed to ferment for a period of three days, with occasional stirring and turning of the meat to hasten fermentation.

After the first fermentation period the meat is ground in a crude apparatus consisting of a heavy roller working back and forth over a flat surface, and is then repressed. The process of fermentation and repressing is carried on daily for from five to seven days.

Oil For Soap Making

All of the oil obtained from the various pressings of fermented meat, is classed as rancid oil for soap-making and similar purposes. The press cake is then fed to hogs. The edible oil represents about one-third of the total oil obtained and is of fair quality, having some fatty acids and a slight burnt taste and odor, and not being entirely free from color.

Where the oil is extracted from the cocoanuts in the Philippines and sent to this country, it is either put up in steel containers or barrels, or shipped in bulk in tank steamers. A number of tank steamers carry their cargoes of American fuel oil and petroleum from the Pacific coast to the Orient, and formerly it was necessary for these tankers to return in ballast. It was not thought feasible to ship vegetable oil in these tankers because of the fear of contamination from the residue of the fuel oil. However, these difficulties were overcome by cleaning the tanks with live steam, swabbing them up with the copra-meat itself, until all trace of the fuel oil has disappeared.

To handle these bulk shipments it has become necessary to construct vegetable oil tanks at San Francisco and Seattle, into which the ships can dump their cargoes. As this oil becomes a solid, resembling paraffine, when subjected to cold weather, it is sometimes necessary to run steam pipes into the ship's hold to melt the vegetable oil sufficiently to pump into the storage tanks. In 1908 the exports of Philippine coconut oil to this country amounted in value to almost \$22,000,000.

Prominent in Other Oriental Lands

While the Philippines have loomed large as exporter of copra and coconut oil, the industry is prominent in many other oriental countries. Some of the best copra in the world comes from the Malabar coast in India, and although prepared by native methods, great care is exercised in choosing the nuts and in ripening them for a month or more on platforms. When the nuts are dried by this process, practically all the water is eliminated and the meat comes out white and in good condition.

In Ceylon a great deal of the copra is made over drying kilns, somewhat like the tapahan of the Philippines, the hands of syndicates and large companies, which are introducing more modern methods for handling the nuts.

PACIFIC COAST JUMPER WHO SETS A NEW MARK



JOHN MURPHY

Portland, Ore., will be represented in the Olympic Games at Antwerp by John Murphy of the Multnomah A.A.C. In the final tryouts held at the Harvard Stadium, Cambridge, Mass. he bettered his own high jump record made last year. To win then he jumped 6 feet 3 3/16 inches. This year he cleared the cross bar when it stood at 6 feet 4 1/4 inches.

Java ranks as about the second largest copra producing country of the world. Few artificial drying apparatus are used, however, and these are only of the primitive types and the local manufacture. In Java, the copra driers use zinc sheets to protect the nuts from the fumes and smoke of the fuel pot, thus reducing the amount of foreign matter introduced into the copra. In a few plants the copra is dried by using hot air which circulates about the trays. As elsewhere, however, the bulk of copra produced in Java is sun-dried.

Samoa was the first country to take decisive steps to standardize and improve her copra exports, and today the industry has been placed on a firm footing, and regulations not only prescribe the proper drying apparatus to use, but it is unlawful to pick the nuts from the trees, which insures only fully matured cocoanuts, which fall from the trees, being used.

Slam is supplied with many coconut groves, and the industry could be greatly developed there if proper precautions are taken to protect the trees from pests, but in the absence of such regulations these pests have practically ruined the business.

In East Africa most of the copra produced is sun-dried, but in Malambika both the smoke kiln and the sun methods are employed, and some of the larger syndicates are introducing modern methods in handling the cocoanuts.

MICKIE SAYS

BOOBY A MAN IN 'N' PAPER
I WILL FORGET IT IN TWO
DAYS - BUT PRINT SOMETHING!
HE DON'T LIKE 'N' HE'LL KNOW
'N' PAPER FOR TWO YEARS!
I MUSTN'T THERE WUZ AN EDITOR
WHO STARTED OUT TO
PLEASE EVERYBODY OR BUST!
HE BUSTED!



WHEN GENERAL U.S. GRANT FELL INTO THE ST. LAWRENCE RIVER

Tumbled Into the Water at Pullman's Island Opposite Alexandria Bay—Other Early History of the Thousand Island Territory—A Southern Romance of the Seventies

(The Observer in Clayton on-the-St. Lawrence)

How many of my readers have even heard or read of the time when General Grant tumbled into the river at Pullman's Island, opposite Alexandria Bay? Very few, probably, but several reputable persons who claimed at the time to have been witnesses declared it to be a fact, and, although great efforts were made to suppress knowledge of the humiliating accident to the great commander from going abroad, the news leaked out to be tattled about the surrounding country, and to appear in more or less exaggerated form in partisan newspapers that were glad of an opportunity to belittle the general on account of his political faith.

When at the time of the construction of the Thousand Island House at Alexandria Bay in 1872, Staples, its promoter and builder, made his famous prediction that he would live to see the shores and islands from Alexandria Bay to Clayton the location of a great summer city, the lands on which are now located Thousand Island, Westminster, St. Lawrence Park and Fine View were cow pastures, the only buildings on the site being farmers' residences. Round Island, or Frontenac, was cultivated as a farm, and Murray Hill and Grenell Parks were jungles of underbrush inhabited by every species of ferocious man-eating insects, known to this northern climate.

With the completion of the Thousand Island House, the Rome, Watertown and Ogdensburg railroad placed a boat on the river, the J. H. Kelly, afterwards renamed Islander, which was burned a few years ago, to run from Cape Vincent, then the only railroad terminal along the river, to Alexandria Bay, the only stop between those ports being Clayton and passengers from along the river shores on Wellesley Island from the present location of Thousand Island Park and along the river desirous of connecting with Cape Vincent trains, were taken out in row boats to mid-channel, where the steamer would be halted and muscular deck-hands would lift the traveller and baggage on board.

The first cottage to be constructed along the river was a small affair owned by the late D. C. Porter, of Clayton, and used by himself and family as a week-end resting place, and that is still standing, being used as a kitchen attached to a cottage valued at ten times the cost of the original, near Mr. Rose's cottage at Frontenac.

During the summer of 1877 the small cottage was occupied by a young couple, but who and from where no one knew, and those dwelling together in this far-off locality neither associated with nor making acquaintances with others was suggestive of somewhat mysterious romance as viewed by sentimental ones, but that of the truth had been known there would probably have been revealed evidences of homesickness, regrets and tearful scenes in plenty. A daughter was born to them there, and not long after the child was adopted for a time by a local family and the couple departed as some who claimed to have learned of their secret, for Virginia, from whence had eloped; the woman being the daughter of an old aristocratic former slave owning family, and the man a former northern soldier, with whom she became acquainted during the Civil war and that her masculine relatives had threatened to kill him if he should return.

The mother came regularly every summer after with money and fine clothing for the child, departing every time with tears and lamentations, and when the girl was about eight years old she disappeared, no one here seemed to know where, but probably taken away by the mother.

The second cottage to be erected, was on Pullman Island, a moderate sized, boarded up and down, white painted structure, that today would be considered as very ordinary if located at any of the resorts. Mr. Pullman selected the site as a summer resting place, and in 1872 invited General Grant, with whom he had been acquainted from boyhood, to become his guest for a time. The news of the arrival of the famous commander at Pullman's Island home took passage on wings of wind and a multitude of that familiar type of free-born Americans, who are ever ready to grovel in the dust at the feet of famous and successful men, and just as readily and cheerfully kick them if failures, gathered at the river banks to seek passage on anything floatable to Pullman's Island, which in a few hours was in such complete state of blockade and siege as to almost make prisoners of the Pullman family and guests.

Everything imaginable in or on which the crowd could take passage across the waters was there; steamboats, sailboats, row boats, sail and rowing scows, punts and even slab rafts constructed and manned by neighboring farmers' barefoot boys whose legal guardians, joining in the wild rush to extend welcome to the illustrious visitor, had forgotten and left them behind. On the arrival of each new addition to the flotilla of water craft the general arose from his seat on the piazza to silently greet the visitors by simply lifting his silk hat, probably longing at the time for a lodge in some vast wilderness away from the gaping curiosity seeking crowds that would be equally entertained if a dog fight were going on in the vicinity.

There were several different versions floating about a few days later of how the general came to take an involuntary bath in the mighty St. Lawrence, the most likely one of which was that one day when the crowds had become thinned out, he walked down to where several rowboats were tied to the dock, to place his foot on the gunwale or edge of one, that like a circus jackass side-stepped from underneath its would-be rider, and the general descended between the boat and dock to make a loud splash in the waters. The ladies on the piazza screamed and the masculine population of the island frantically rushed to the rescue of the victim of misplaced confidence, who, landed on the dock, with clothing dripping, presented a sorrowful aspect of humiliating defeat that the momentary fright of the witnesses was succeeded by merry peals of laughter in which the general himself joined, and who was warned against the possible repetition of such disaster by Mr. Pullman, who said, "General, you have led the greatest army of modern times to victory, but allow me to caution you to not recklessly again seek open conflict with one of these rowboats, for they are as treacherous as untamed army mules, and they are liable to bring defeat to you at any time."

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