

little more than two weeks he reports that in spite of his washing them thoroughly as soon as possible with fresh water he is losing many of the *Livistona chinensis* in four-inch pots; however, *Chamaedorea erumpens*, *C. Seifrizii*, *Veitchia Merrillii* and *Ptychosperma Macarthurii* seem to be surviv-

ing, and the washingtonias actually seem to be thriving from the salt dosage.

Mr. Kobernick is keeping meticulous records of germination times, and reports them to the secretary from time to time.

LUCITA H. WAIT

Palm Cabbage

W. H. HODGE

The family of the palms is one of the largest among flowering plants. It is also one of the most important, probably surpassed only by the grass family in its value to mankind. Edible fruits or seeds, oils, waxes, sugar and fibers are some of the more important contributions that these plants make to the economy of mankind.

On occasion, visitors to the tropics or subtropics, or residents there, may have the opportunity to taste one of the many lesser economic products of palms, namely "palm cabbage" or "heart of palm", as it is also known. Each of these names is appropriately descriptive when one understands that they both apply to the terminal bud of a palm tree. This bud, the active growing point of the tree, is composed of tender embryonic leaves located at the tip of the trunk where the bud is amply protected by the numerous imbricated basal sheaths of the mature leaves. The palm bud is thus certainly the "heart" of the palm, both with regard to its position as well as its function.

On the other hand, palm cabbage is in most ways best compared in flavor and use with ordinary cabbage. Primarily a texture food, it has a mild sweetish (or slightly bitter in inferior species) nutty flavor when eaten fresh, but a smoother asparagus-like texture when cooked. Moreover, the few assays that have been made of the composition

and food value of palm cabbage show that it is very similar to true cabbage (*Brassica*). Analyses made in Central America focused attention on two species, Mexican coyol (*Acrocomia mexicana*) and one of the deep forest palms, *Geonoma edulis*, while a Cuban analysis dealt with the Cuban royal palm (*Roystonea regia*). In food energy (calories), water content, protein, fat and total carbohydrate, the cabbages of these palms were almost identical with *Brassica*. Principal differences occur in calcium and phosphorus content which, in the palms, is double the value of *Brassica*. Palm cabbage has only traces of vitamin A as opposed to the considerable vitamin A content of true cabbage. On the other hand, palm cabbage has about the same content with regard to thiamine, riboflavin and niacin, but has only one half the ascorbic acid content.

A difference in availability of these two vegetable foods that will always exist relates to the fact that cruciferous cabbage is an herb, grown in horticulture as an annual or biennial, whereas palms are perennial trees. True cabbage is grown economically on an annual basis and at time of harvest essentially the whole aerial part of the plant is used as food. In contradistinction, to enjoy palm cabbage, a mature tree must be sacrificed; and since the delicate bud represents only a minor portion of the

plant body that can be utilized, this is obviously a wasteful operation. Thus

palm cabbage is a delicacy that, in many areas, can only be enjoyed when a palm



111. *Euterpe edulis* ?, growing in mountain forests near Rio de Janeiro, Brazil. This slender, single-stemmed palm is probably the major source of palm cabbage widely available in the Brazilian market.



112. A young royal palm, *Roystonea*, showing the smooth green crownshaft typical of this genus. Within this imbricated cylinder of leaf bases is the tender cylindrical terminal bud, source of edible palm cabbage.

tree has to be felled for some other purpose.

It is probable that the buds of most

palm species are edible. This is a useful bit of emergency food knowledge for anyone traveling in out-of-the-way parts



113. The fresh cylindrical cabbage of a palm, *Euterpe dominicana* (center), as extracted from the terminal portion of a tree. On either side are young inflorescences of this species, endemic to the Lesser Antillean isle of Dominica.

of the tropics. I can recall an instance, some twenty years ago, during World War II, while on quinine procurement work in eastern Peru, when palm cabbage was a regular Godsend. Slender palms of various genera were common in the montane forests where we were working. Food was plain — rice with such game as we could procure — but fresh vegetables and fruit were totally lacking. An occasional palm cabbage was our only source of fresh salad. As I remember it, that Peruvian cabbage was passable. I have said that the buds of most palms are probably edible. It has been reported that the bud of *Orania* is poisonous, and the majority may lack sweetness or may even be on the bitter side. There has been no systematic edibility survey of the genera of palms with respect to their "cabbages," so we simply cannot say. On the other hand, certain genera — in particular *Euterpe*, *Prestoea*, *Roystonea*, *Sabal*, and *Welfia* — are well known for the sweetness and succulence of their buds. Others described in the literature as edible include species of the genera *Acrocomia*, *Astrocaryum*, *Bactris*, *Geonoma*, *Hyospathe*, and *Socratea*. All of these, as well as those above listed, are neotropical taxa. As a matter of fact there are but very few records that I know of referring to the use of paleotropical palms for cabbage; most pertain to palms of the New World.

Familiar to many is the common palmetto (*Sabal Palmetto*) of our South, the state tree of Florida and South Carolina. An alternate name, cabbage palmetto, refers to the not infrequent use of the bud of this common but slow-growing palm for cabbage. In the "glades" area of Florida, "swamp cabbages" — as palm hearts are more frequently known — often are offered as a special delicacy at picnics and barbecues. The

1964 annual jamboree of the Everglades Conservation and Sportsman Club saw some 10,000 visitors enjoying a gourmet salad made from 500 swamp cabbages.

Best quality palm cabbage appears to come from the genus *Euterpe*. Approximately a dozen species are involved, one or more being found in most parts of tropical America, generally in mountainous terrain. At least one, the *assai* palm (*Euterpe oleracea*), ranges widely in riparian sites in the lowlands of the Guianas and Amazonia. Palms of this genus are commonly known in English as "cabbage palms." They are slender graceful plants (the Greek from which the name *Euterpe* was derived means "forest grace") characterized by having a crownshaft (a readily distinguishable false trunk) surrounding the main trunk and made up of the sheathing green bases of the leaf stalks or petioles, which enclose the elongated apical bud within in protective fashion.

My first taste of palm cabbage was that of the then undescribed mountain palmiste (*Euterpe dominicana*), endemic to the Lesser Antillean island of Dominica where, in the late thirties, I was first introduced to the tropics. Pint-sized Dominica has magnificent mountain forests, and in those days the *palmiste montagne* was a common component of certain rainforest communities. Moreover, palm hearts, though not a regular item, were occasionally vended with other tropical vegetables in the town market at Roseau, and those planters living in the interior occasionally supplemented their meals with a serving of *coeur de palmiste*, as this vegetable was called in the local island patois.

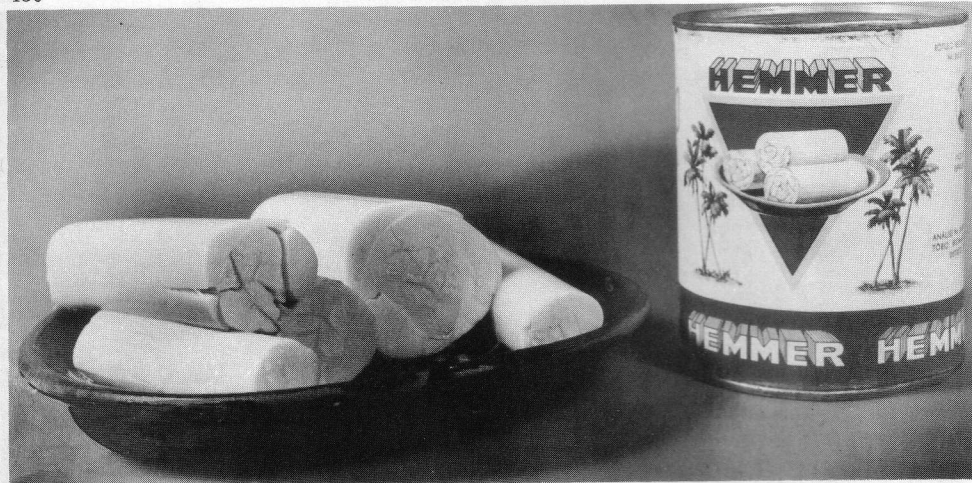
Morphologically the bud making up palm cabbage, like the garden cabbage "head" or bud, is a collection of imbric-



114. Preparing "swamp cabbage" salad from terminal buds of the cabbage palmetto, *Sabal palmetto*. Sharon Bullock, member of Miami's Everglades Conservation and Sportsman Club, helps prepare salad from some of the 500 palm hearts served to 10,000 people at the Club's 1964 Jamboree (Photo courtesy of the Miami Herald).

cated leaves which has been compressed into a tight vegetable package. Garden cabbage is spherical in shape whereas palm cabbage takes the cylindrical form of the tree trunk in which it occurs. It is a simple task to extract the bud from a felled palm tree. The cylindrical segment of the stem represented by the green crownshaft is simply cut out, — in Latin America usually with a machete. A slit is then cut longitudinally for the full length of the crownshaft. Once the outer leaf bases are removed, a white internal cylinder of tender immature leaves is obtained. This is the palm heart or cabbage. Depending upon the species of palm involved, this may vary in diameter from one to several inches,

and in length from one to several feet. Over 150 years ago, in his personal narrative of travels, Alexander von Humboldt described Indian women of the Orinoco serving their men "roasted monkey, fermented liquors and palm cabbage . . . six feet long and five inches in diameter." As in head cabbage, the tenderest leaves of the palm heart are the youngest and are innermost. Palm cabbage may be eaten raw, out of hand, or cut or chopped up in salad with salt or an appropriate dressing. On the other hand, and as with head cabbage, it may be simply cooked or incorporated in various food preparations such as soups, stews or omelets. For those who may have the chance to try tinned palm



115. Brazilian tinned palm cabbage (possibly from *Euterpe edulis*), as taken from a can.

hearts, here are a few simply recommended recipes:

Palm Heart Salad

Marinate slices of palm heart in a dressing of vinegar, olive oil, minced onion (optional), salt and pepper, and serve on lettuce or on top of tomato slices.

Canned palm heart is an excellent addition to any non-fruit salad.

Palm Heart Soup

Canned palm heart, chopped fine, makes an excellent cream soup. Chopped palm heart is also an interesting addition to cream of tomato soup.

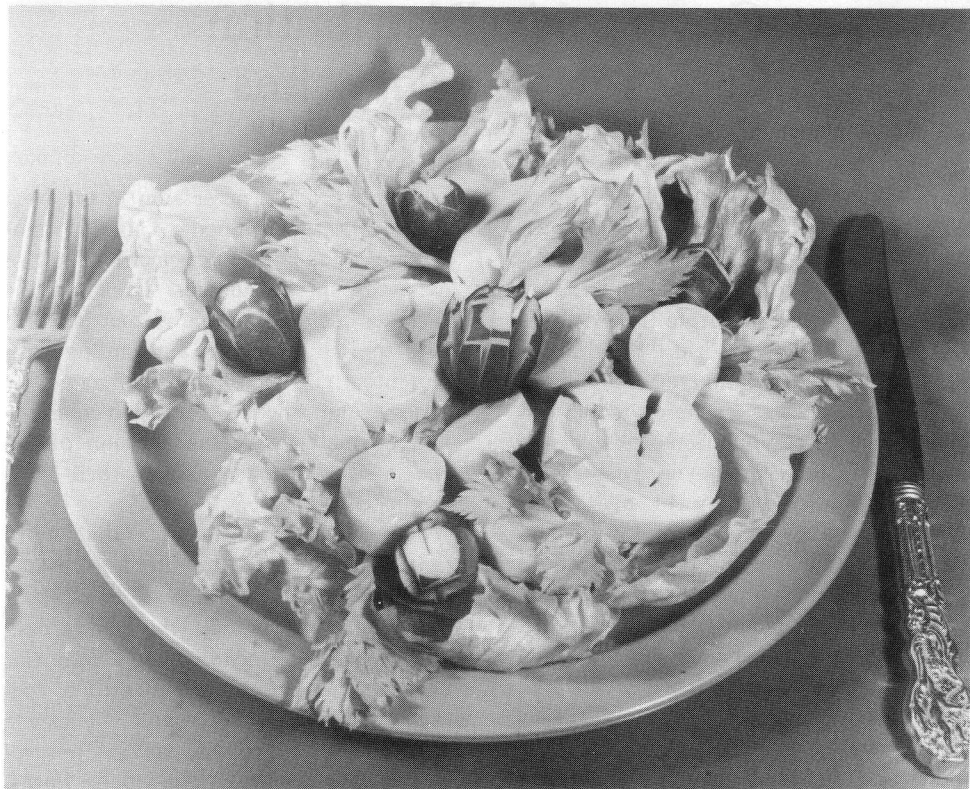
Palm Heart Omelet

Add diced canned palm heart (which has been sautéed in a little butter) in an omelet before it has been folded.

Although I have said that palm cabbage is a rather infrequently used vegetable in most part of the American tropics, there is at least one area where it is so widely and regularly used that it has become almost a standard vegetable item in the diet. The area is Brazil. If any country can afford the destruction of a palm tree for each family serving of palm heart — or *palmito*, as it is known in Latin America — it should be

Brazil, for that land is noted for both the variety and numbers of its palms. Undoubtedly the world's palm flora reaches its zenith in Brazil. The cabbage palm genus, *Euterpe*, is likewise abundant — at least in individuals if not in species. As with the majority of palms, the latter are still incompletely known, and this may even be true of Brazil's *palmito*-producing palm, generally assumed to be *Euterpe edulis*. This non-clumping species forms very extensive stands in the humid montane forests along roughly a thousand miles of the Brazilian coast from Espirito Santo to Santa Catarina.

During two recent trips, I was struck by the almost universal use of *palmito*, at least in the population centers around Rio de Janeiro and Sao Paulo. Not only does one see fresh *palmito* in the markets, but every corner grocery store and restaurant seems to be well stocked with tinned palm cabbage. As one Brazilian botanist expressed it, "Almost everyone has his *palmito* salad or soup nowadays." Curiously enough, this same Brazilian, who is a well-traveled field botanist, had no idea where in Brazil all this tinned palm cabbage comes from — nor have I been able to ferret out this



116. Sliced Brazilian palm cabbage served on a fresh salad plate.

information from the limited local data that have been made available to me. Suffice it to say that the rate at which palms are being sacrificed for this industry will eventually deplete the natural supply, which at present undoubtedly seems limitless.

No figures are available on the present level of consumption of palm cabbage in Brazil. Export figures do show the following: export of tinned *palmito* has increased slightly from 586 tons in 1954 to 662 tons in 1961 (the latter

valued at U.S. \$22,000). Most of this goes to neighboring Argentina, but some has been shipped to Europe, and I have noted tins of Brazilian *palmito* recently in a new specialty grocery in downtown Washington, D.C. During the same period no fresh *palmito* was exported until 1956 when four tons appear in the record; in 1961 this increased to approximately 520 tons valued at \$12,000. From these figures we can infer that palm heart utilization in Brazil is substantial at the present time.

